Model Examinations

Model 1

Answer the following questions :

1 ***Choose the correct answer :***

(1) If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. $\left(\pi = \frac{22}{7}\right)$ (3.5 *or* 7 *or* 22 *or* 44)

(2) Twice the number x subtracted 3 from it = ...
($x - 3$ *or* $2x + 3$ *or* $2x - 3$ *or* $3 - 2x$)

(3) If $X = \{x : x \in \mathbb{N} , 2 \leq x \leq 3\}$, then X = ...
($\{3 , 2\}$ *or* $\{3\}$ *or* $\{2\}$ *or* $\varnothing$)

(4) $(49 \div 7)$ .... $\mathbb{N}$ ($\subset$ *or* $\in$ *or* $\not\subset$ *or* $\notin$)

(5) The number of symmetrical axis of rhombus is ....
(0 *or* 1 *or* 2 *or* 4)

(6) The area of a square whose diagonal length is 8 cm. = ... cm^2.
(44 *or* 36 *or* 50 *or* 32)

(7) If x is an odd number , then $x + 2$ is ....
(even *or* odd *or* prime *or* otherwise)

(8) The ordered pair (2 , 5) = ($2x$, 5) , then x is ....
(5 *or* 3 *or* 2 *or* 1)

(9) The multiplicative neutral element in N is ....
(0 *or* 1 *or* 2 *or* 3)

(10) On the coordinate plane : M (5 , 1) , N (5 , 6) , then MN = ... length unit. (2 *or* 5 *or* 6 *or* 8)

(11) The opposite geometric transformation is ....
(rotation *or* translation *or* reflection)

(12) The set of even numbers (E) ∩ the set of prime number (P) = ...
(P *or* {0} *or* $\mathbb{N}$ *or* {2})

(13) If the side length of a square is x and its perimeter is P , then P = ...
($4x$ or $x+4$ or $x-4$ or $4-x$)

(14) $(8 \times 3) \times 5 =$ .... $\times (3 \times 5)$ (3 or 5 or 8 or 35)

2 Complete each of the following :

(15) 1 , 4 , 8 , 13 , ... , ... (in the same pattern)

(16) The sum of two numbers is 35 , one of them is x , then the other is ....

(17) The base length of a triangle is 8 cm. and its height is 5 cm. , then its area = ... cm^2.

(18) The smallest counting number is ....

(19) 32 + (59 + ...) = (32 + 68) + ...

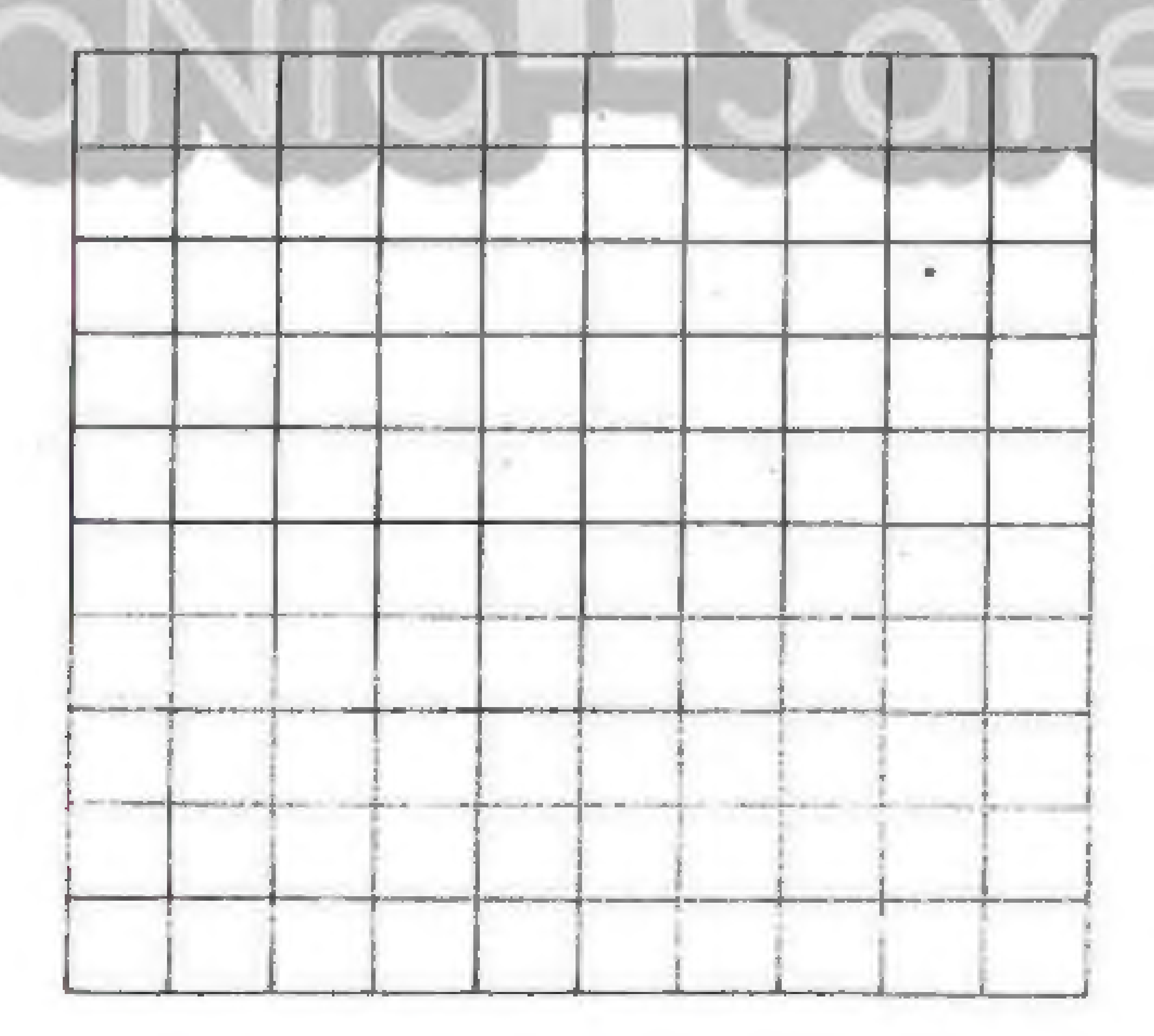
(20) The area of rhombus whose diagonals are 10 cm. and 20 cm. is .... cm^2.

3 Answer the following :

(21) By using the properties of multiplication , find the value of : $4 \times 31 \times 25$

....

(22) In the cartesian coordinates determine the points
A (8 , 5) , B (8 , 2) , C (5 , 2) , D (5 , 7)
, then draw the figure ABCD and draw its image by reflection in $\overleftrightarrow{CD}$



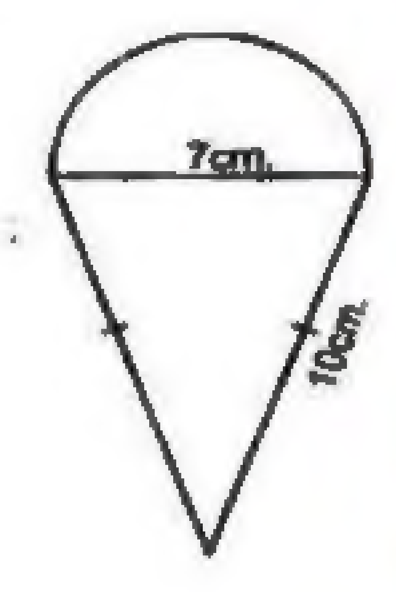
(23) Solve in ℕ the equation : $3x + 5 = 17$

....

(24) Calculate the perimeter of opposite figure :

$\left(\pi = \frac{22}{7}\right)$





....

....

....

....

(25) If a = 3 and b = 4 , find the numerical value of : $(b - a)(b + a)$

....

(26) If the age of a man now is x years , find :

[a] The age of the man after 7 years ....

[b] The age of the man since 5 years ....

(27) A paralellogram has a base of length 14 m. and a corresponding height 9 m. Find its area.

....

(28) If the number x exceeds twice the number y by 7 , write down the mathematical relation which relates x by y

....

(29) Using the properties of commutative and associative in ℕ to find the result of the following :

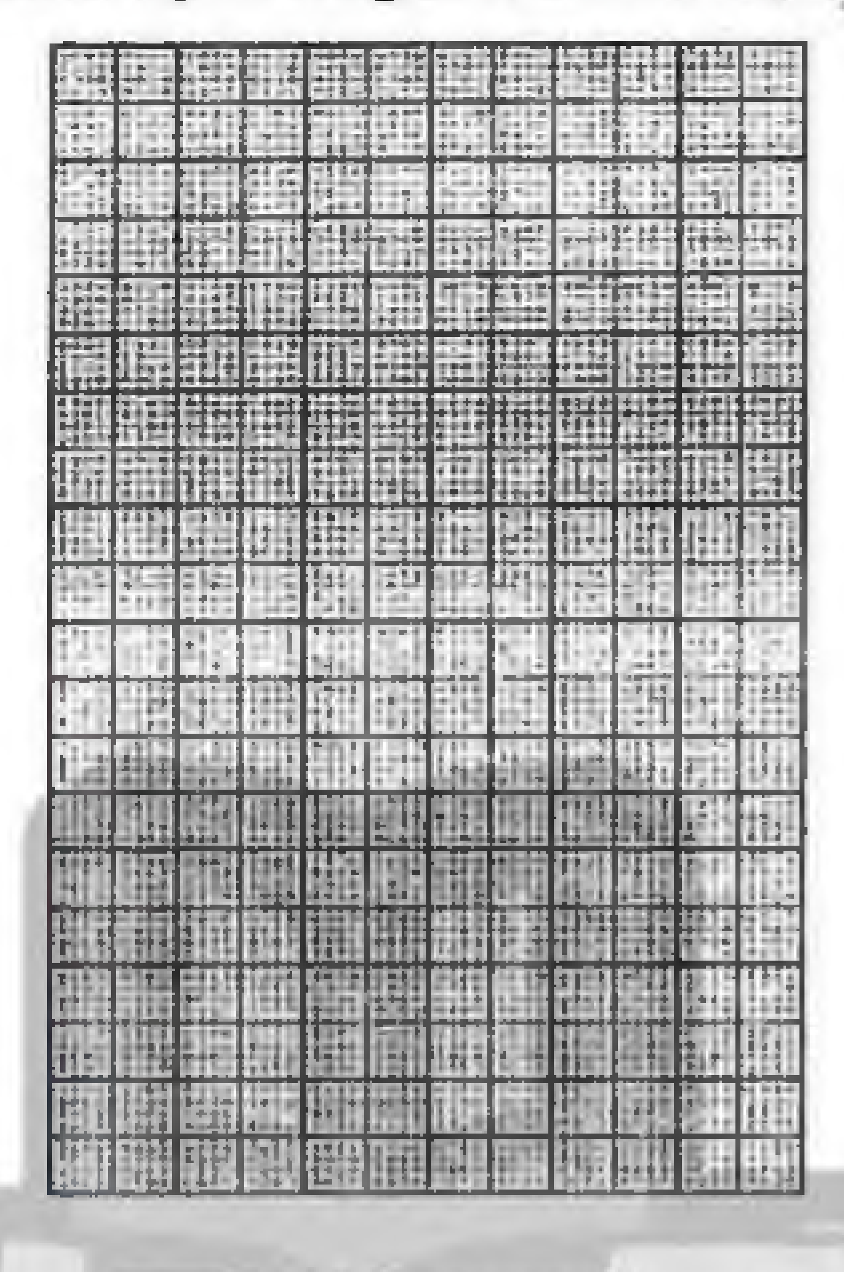
156 + 871 + 344 + 129 (Write the used property)

....

(30) The following table shows the marks of 50 pupils in mathematics exam in a month :

The sets	10 –	20 –	30 –	40 –	The total
The frequency	10	12	18	10	50

Represent the data by histogram and frequency polygon.



Model 2

Answer the following questions :

1 *Choose the correct answer :*

(1) The square whose perimeter is 16 cm. , its area = ... cm^2.

(4 or 16 or 8 or 7)

(2) The sum of two numbers x and y is 10 , then y = ...

($10-x$ or $x-10$ or $10x$ or $\frac{10}{x}$)

(3) The number of symmetry axes of a rectangle is ....

(0 or 1 or 2 or 3)

(4) $3 \times (2 + 10)$ = ... (30 or 36 or 40 or 13)

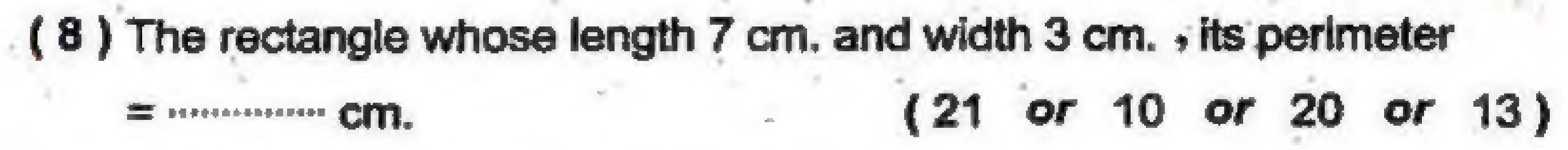
(5) If 7 y = 84 , then $\frac{1}{2}$ y = ... (6 or 12 or 21 or 42)

(6) 1 , 3 , 9 , 27 , ... (in the same pattern)

(32 or 64 or 37 or 81)

(7) If O is the set of odd numbers , then O .... $\mathbb{N}$

($\in$ or $\notin$ or $\subset$ or $\not\subset$)



(8) The rectangle whose length 7 cm. and width 3 cm. , its perimeter = ... cm. (21 or 10 or 20 or 13)

(9) The additive identity element in ℕ is .... (0 or 1 or 2 or 3)

(10) $32 \times 53 + 32 \times$ .... $= 32 \times 100$ (53 or 47 or 37 or 23)

(11) The area of parallelogram = ... ($b + h$ or $b - h$ or $b \times h$ or $\frac{b}{h}$)

(12) The area of a rhombus equals 24 cm² and the length of one of its diagonals is 8 cm. , then the length of the other diagonal = ... cm. (3 or 6 or 8 or 12)

(13) The difference between three times a number and two is .... ($3x + 2$ or $3x - 2$ or $2 \times 3x$ or $\frac{3x}{2}$)

(14) $(7 \times 3 - 3 \times 7)$ .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 Complete each of the following :

(15) If A (3 , 4) , B (5 , 2) , then the coordinate of the midpoint of $\overline{AB}$ is (.............. , ...)

(16) The opposite geometric transformation  is ....

(17) If the perimeter of an equilateral triangle is 18 cm. and its area is 15 cm² , then its height is .... cm.

(18) The diameter length of a circle whose circumference is 88 cm. = ... cm. $\left(\pi = \frac{22}{7}\right)$

(19) An odd number × an even number = ... number.

(20) The isosceles trapezium has .... axis of symmetry.

3 Answer the following :

(21) Solve the equations in ℕ :

[a] $2x - 5 = 3$

[b] $a + 7 = 20$

....

....

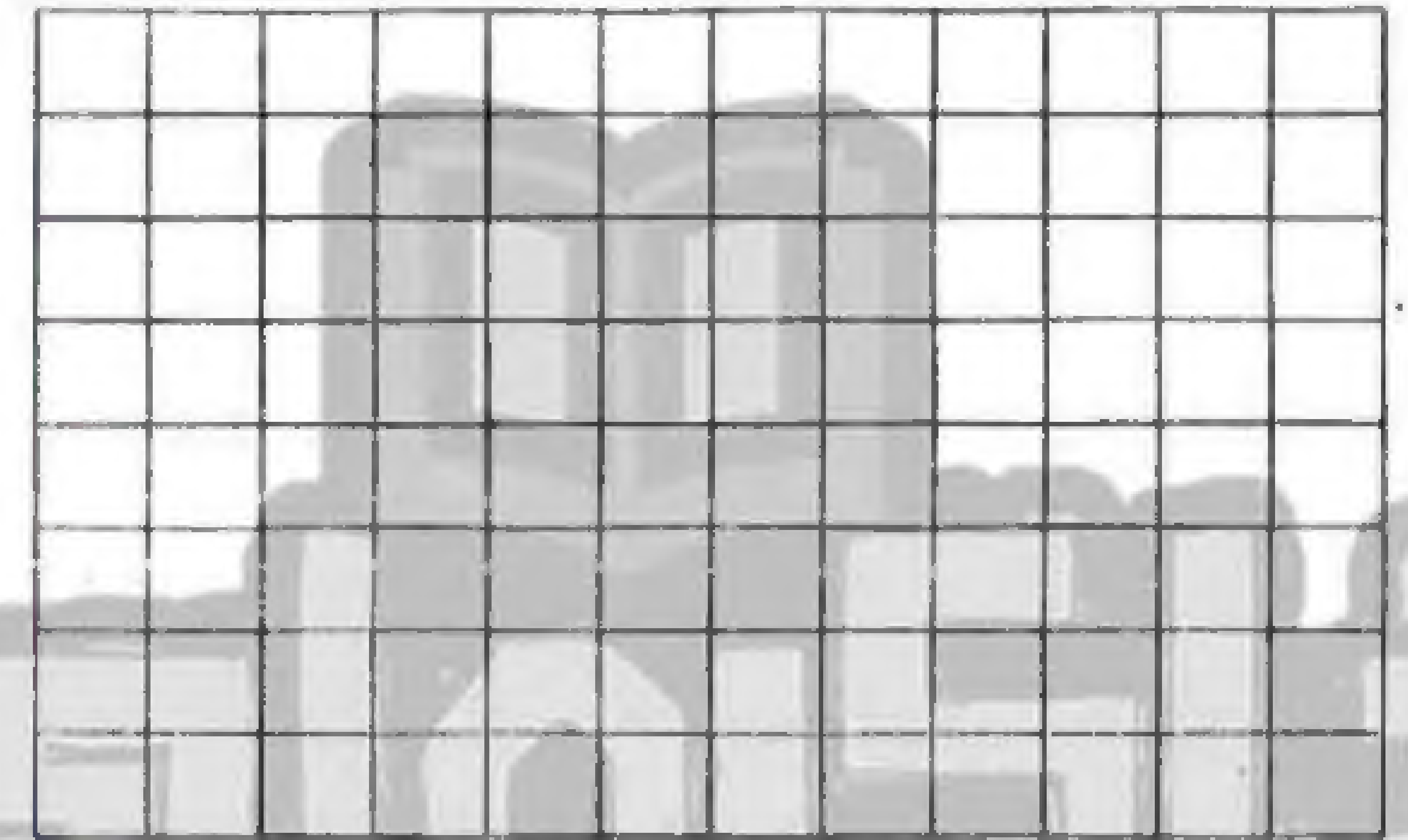
(22) Which is greater in area ?

A square with its diagonal length 12 cm. or a rhombus with the length of its diagonals are 15 cm. and 10 cm.

....

....

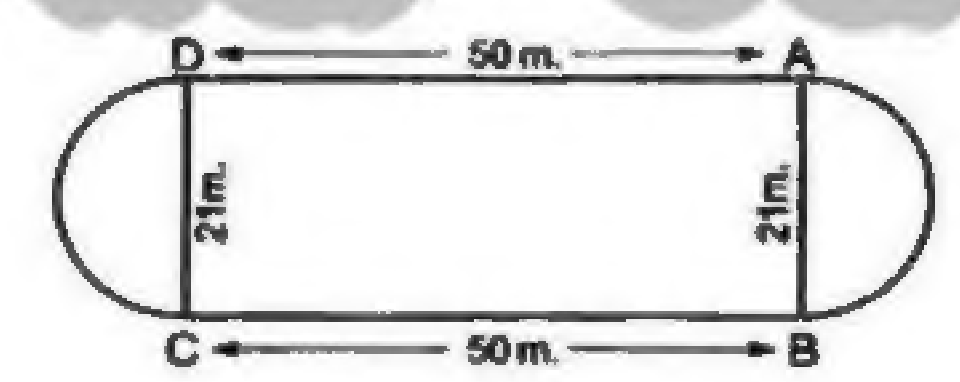
(23) On the coordinate plane draw Δ ABC where A (2 , 1) , B (5 , 1) , C (5 , 5) , then draw the image of Δ ABC by reflection in $\overleftrightarrow{BC}$



(24) Using the properties of addition in ℕ , find : 55 + 36 + 45 + 64

....

(25) Find the perimeter of the figure where AB = 21 m. and AD = 50 m. $\left(\pi = \frac{22}{7}\right)$



....

....

(26) Use the properties to find the result : 8 × 47 × 125

....

(27) If a = 3 , b = 4 , c = 0 , find the value of : 2 × a + 5 × b − c

....

(28) Use the distribution property to find : $37 \times 46 + 37 \times 54$

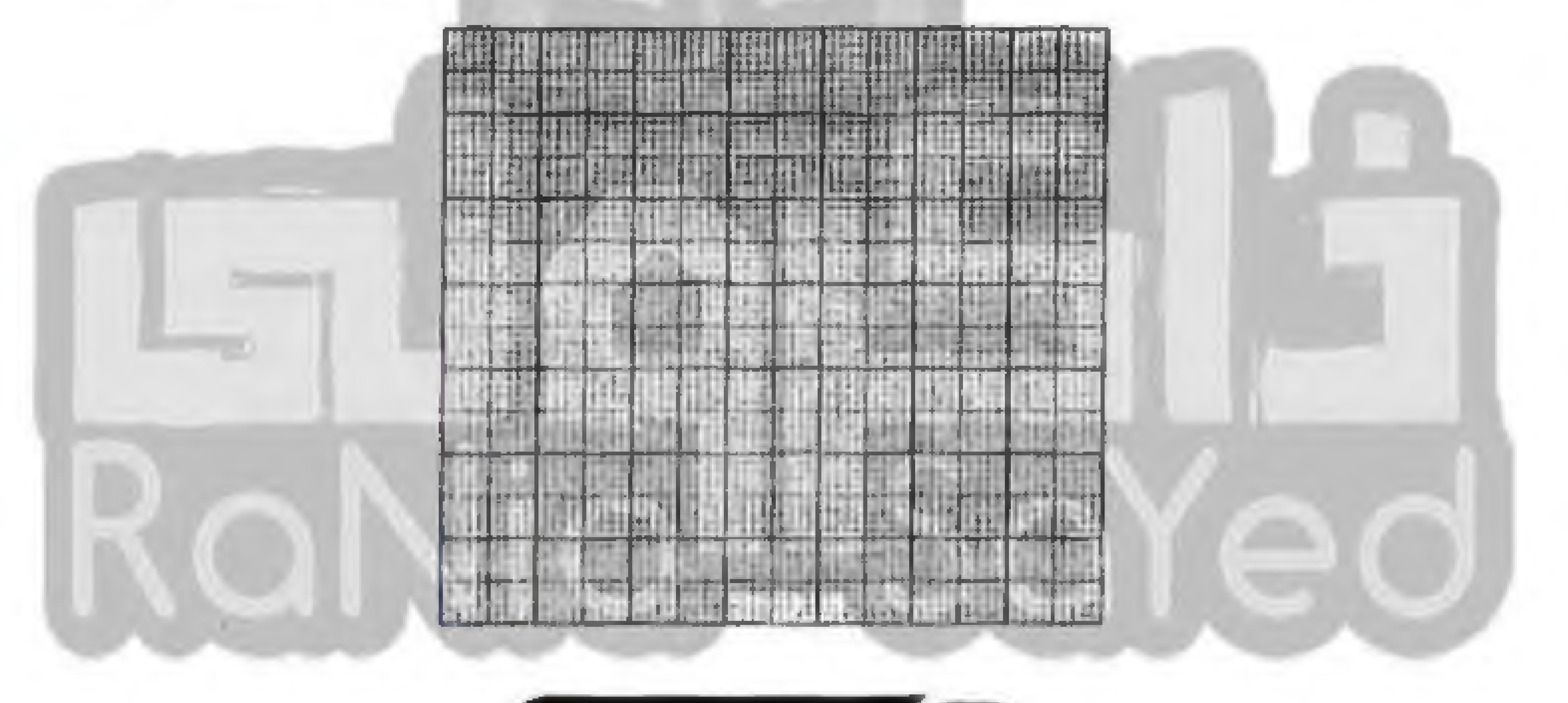
(29) If $X = \{2 , 3 , 4 , 5\}$ and Y is the set of factors of 6 , then find the following :

[a] $X \cap Y$ [b] $X \cup Y$

(30) The following table shows the recorded temperatures in 40 cities on a day :

Temperature	20 –	22 –	24 –	26 –	28 –	Total
No. of cities	7	9	11	8	5	40

Represent these data by a histogram.



Model 3

Answer the following questions :

1 ***Choose the correct answer :***

(1) If $86 \times 15 = 86 \times a + 86 \times 10$, then a = ...

(1 *or* 5 *or* 15 *or* 10)

(2) $\{2 , 3\} \cap \{1 , 4\}$ = ...

($\varnothing$ *or* $\{1 , 2 , 3 , 4\}$ *or* $\{2 , 3\}$ *or* $\{1 , 4\}$)

(3) The area of the rhombus of diagonal length 7 cm. and 10 cm. is .... cm^2.

(17 *or* 70 *or* 35 *or* 40)

(4) If x is an odd number , then $x + 3$ is .... number.
(odd or even or prime or otherwise)

(5) The number of axes symmetry of square is ....
(1 or 2 or 3 or 4)

(6) If $x + 8 = 15$, then $x =$ .... (3 or 7 or 6 or 5)

(7) The diameter length of a circle whose circumference is 88 cm. equals .... $\left(\pi = \frac{22}{7}\right)$ (28 or 14 or 7 or 21)

(8) If three times a number subtracted from 15 , then the expression that expresses this is ....
($3x + 15$ or $15 - 3x$ or $3x - 15$ or $x - 15$)

(9) The square whose area is 36 cm^2 , the length of its side = ... cm.
(5 or 6 or 3 or 7)

(10) The multiplicative neutral element in $\mathbb{N}$ – the additive neutral element in $\mathbb{N}$ = ... (0 or 1 or 2 or 3)

(11) If $x = 2$ and $y = 3$, then $5xy =$ .... (10 or 11 or 13 or 30)

(12) The midpoint between (1 , 5) and (5 , 5) is ....
((5 , 3) or (3 , 5) or (5 , 1) or (5 , 5))

(13) The opposite geometric transformation ⇨ ⇦ is ....
(translation or reflection or rotation)

(14) The perimeter of rectangle is 20 cm. , and its width is x cm. , then its length is .... ($10 - x$ or $20 - x$ or $x - 10$ or $x - 20$)

2 ***Complete each of the following :***

(15) 1 , 1 , 2 , 3 , 5 , 8 , ... , ... (in the same pattern)

(16) 75 + 89 = 89 + 75 (............ property)

(17) If $945 = (x \times 100) + 45$, then $x =$ ....

(18) The area of the parallelogram whose base length is 8 cm. and height 2.5 cm. is .... cm^2.

(19) The symmetry axis divides the figure into two .... halves.

(20) If $x \in \mathbb{N}$, $2x = 8$, then $x =$ ....

3 *Answer the following :*

(21) Solve the equation in $\mathbb{N}$: $5x - 2 = 8$

....

(22) Use the properties of addition and multiplication to find the value of :

[a] $45 \times 27 - 45 \times 27$ [b] $28 + 36 + 72 + 64$

....

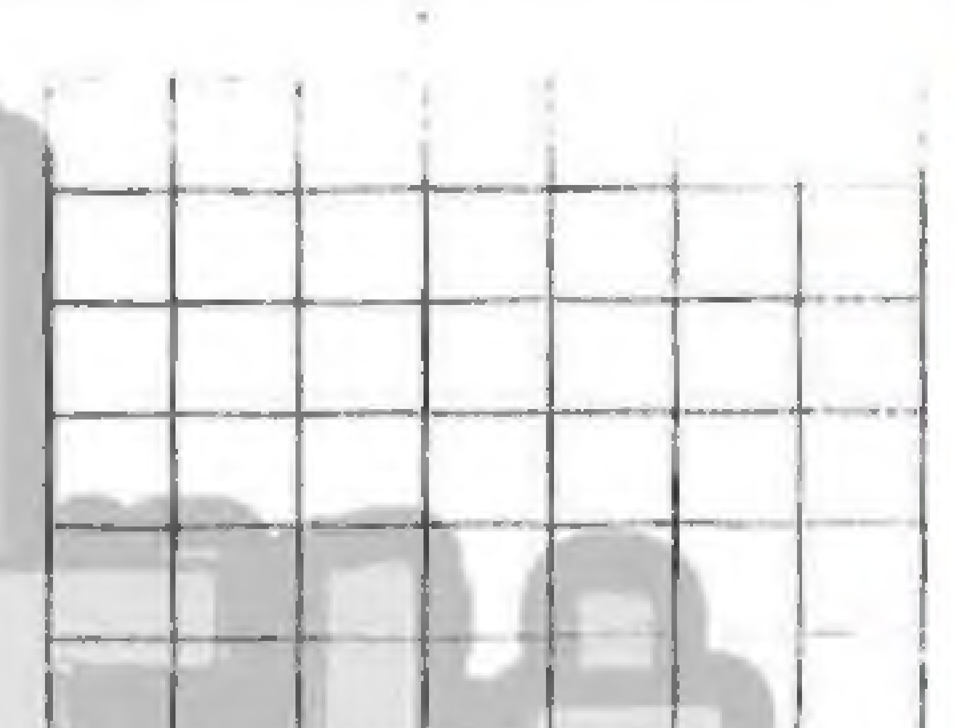
(23) In 2-dimensional coordinate plane

locate the points A (3 , 1)

, B (5 , 1) , C (5 , 3) and D (3 , 3)

Name the figure ABCD

, then find its area.



....

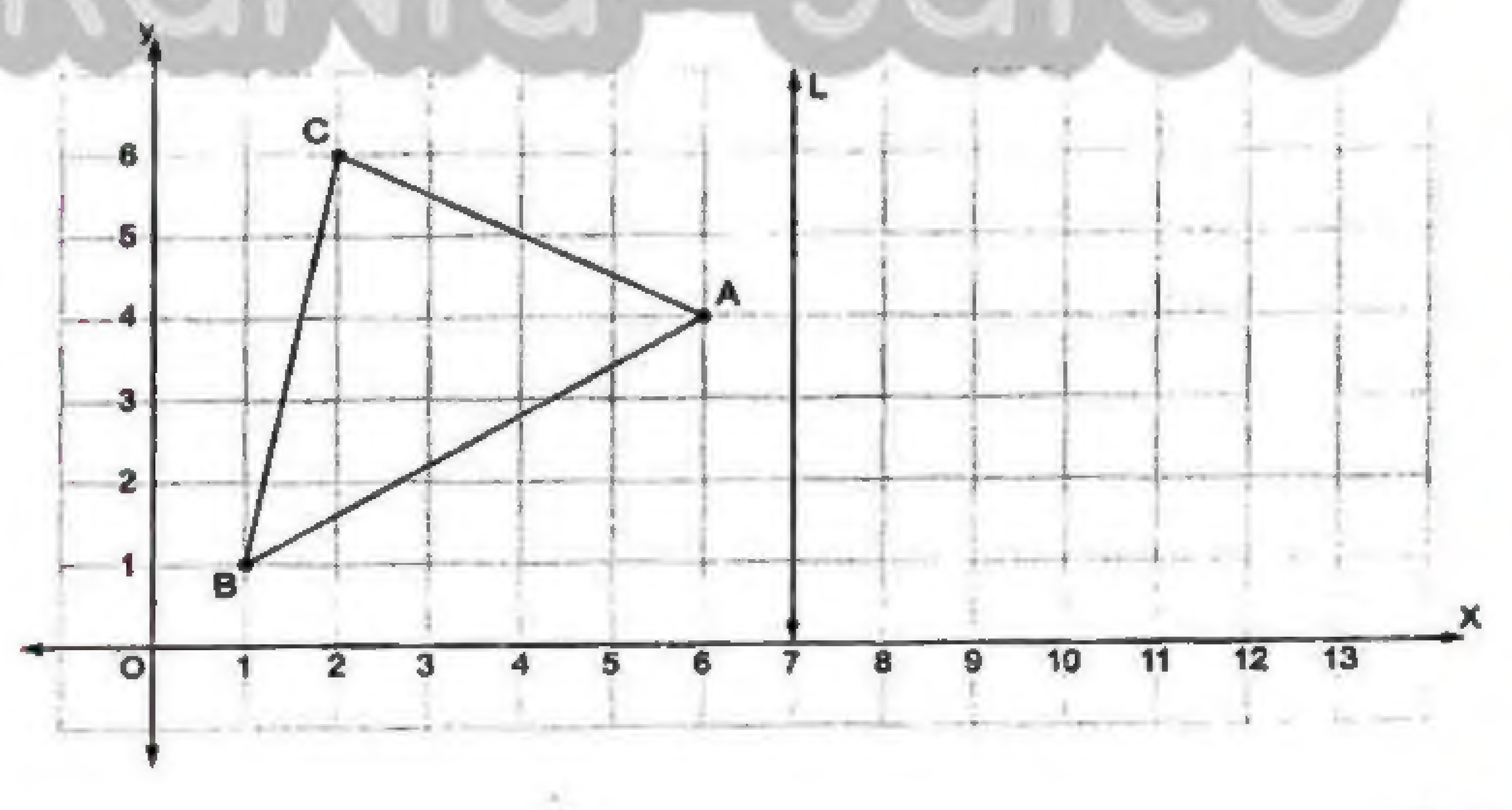
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(24) If $X = \{a : a \in \mathbb{N} , 1 \le x < 5\}$, $Y = \{4 , 5 , 6\}$, find :

[a] $X \cap Y$ [b] $X \cup Y$ [c] $X - Y$

....

(25) In the cartesian coordinates plane , from the following figure :

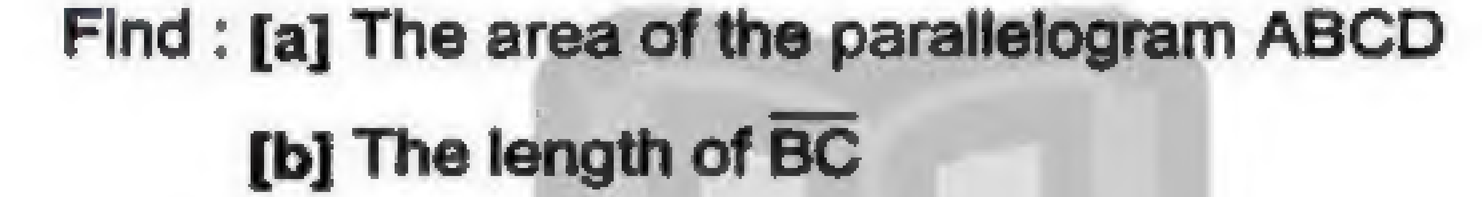


[a] Complete :

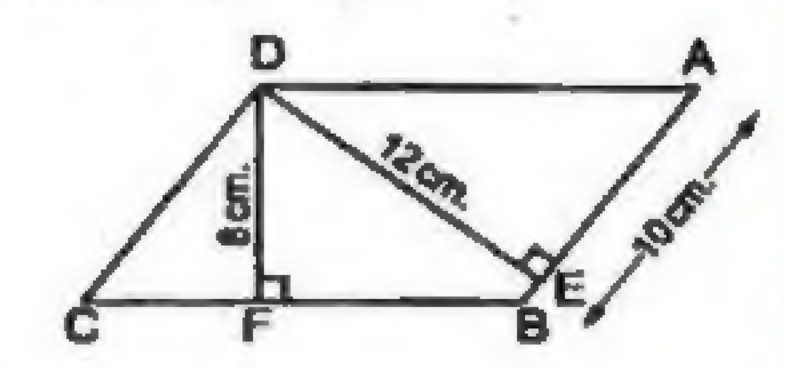
A (……… , ………) , B (……… , ………) and C (……… , ………)

[b] If L is the axis of reflection of the Δ ABC , draw Δ ÀB̀C̀

the image of Δ ABC by reflection in the straight line L



(26) In the opposite figure :



ABCD is a parallelogram in which

AB = 10 cm. , DE = 12 cm. , DF = 8 cm.

Find : [a] The area of the parallelogram ABCD

[b] The length of $\overline{BC}$

………………………………………………………………………………

………………………………………………………………………………

(27) In the opposite figure :



Calculate the perimeter of the figure where AM = 35 cm. $\left(\pi = \frac{22}{7}\right)$

………………………………………………………………………………

(28) An employee spends his salary as following :



L.E. 200 for clothes.

L.E. 800 for food.

L.E. 400 for transportation and medicine.

L.E. 200 for renting.

Graph that data on the opposite pie graph.

(29) Which is greater in area ?

Asquare whose diagonal is 10 cm. or a rhombus of area 80 cm^2.

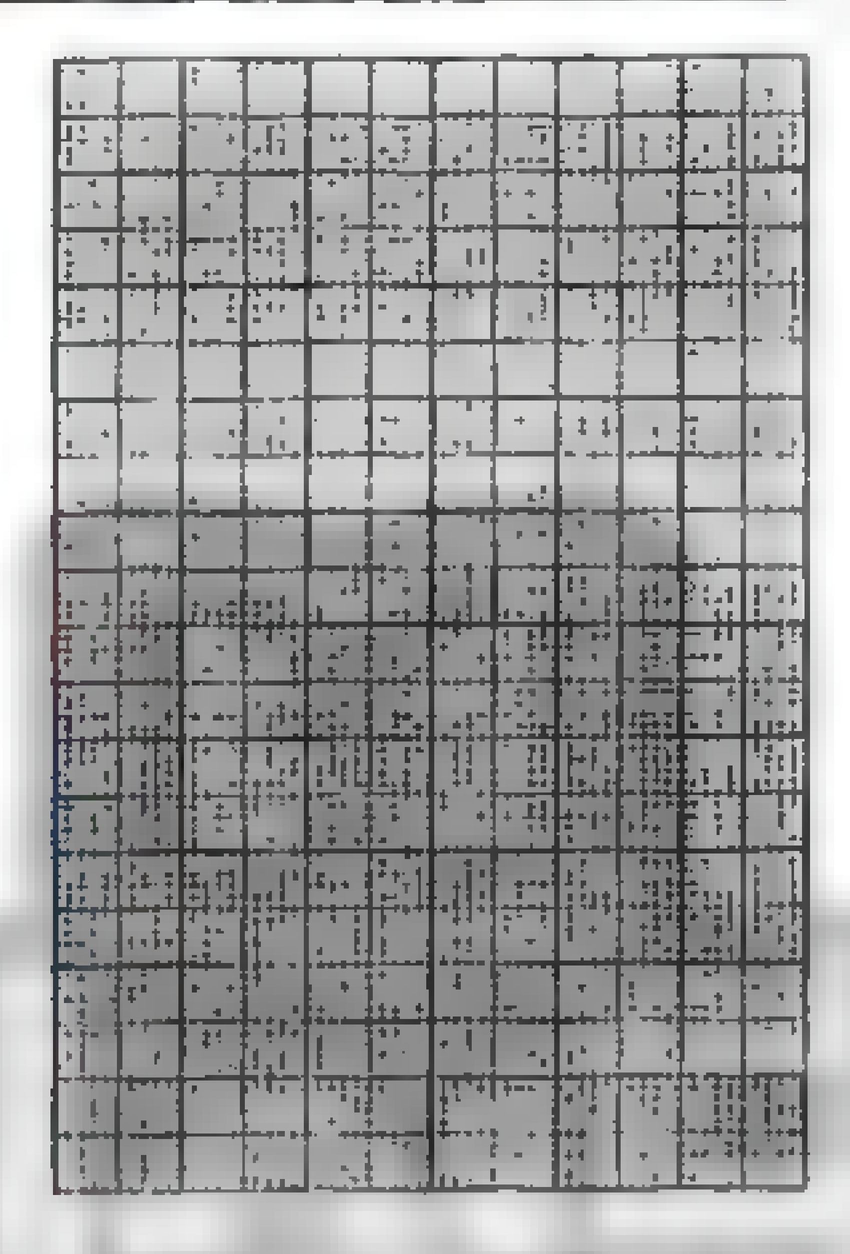


………………………………………………………………………………

………………………………………………………………………………

(30) Represent the following data by a frequency ploygon :

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50





Answer the following questions :

1 *Choose the correct answer :*

(1) The next number in the pattern 5 , 35 , 65 , ... is ....
(70 or 95 or 105 or 115)

(2) If X = $\{x : x \in \mathbb{N} , x < 3\}$, then X = ...
($\{1 , 2\}$ or $\{2\}$ or $\{0 , 1 , 2\}$ or $\varnothing$)

(3) The number of axes of symmetry of the rhombus equals ....
(zero or 1 or 2 or 4)

(4) The circumference of the circle its radius 5 cm. = ... π cm.
(10 or 5 or 20 or 4)

(5) 53 × 16 = 16 × .... (35 or 61 or 53 or 16)

(6) If 10 = 2 y , then the value of y is .... (5 or 6 or 8 or 14)

(7) The multiplicative neutral element in $\mathbb{N}$ is ....
(0 or 1 or 2 or 3)

(8) Subtracting 5 from double the number x = ...
($x-5$ or $2x-5$ or $5-2x$ or $5x$)

(9) The area of rhombus whose diagonals are 6 cm. and 8 cm.
= .... cm².
(48 or 14 or 24 or 100)

(10) (49 ÷ 8) .... $\mathbb{N}$
($\subset$ or $\not\subset$ or $\in$ or $\notin$)

(11) If x is an odd number , then $x + 3$ is .... number.
(odd or even or prime or otherwise)

(12) If $x + 5 = 7$, $x \in \mathbb{N}$, then x = ...
(1 or 2 or 3 or 4)

(13) The triangle whose base length is 5 cm. and the corresponding heigth of it is 8 cm. , its area = ... cm².
(13 or 20 or 26 or 40)

(14) On the coordinate plane : M (1 , 2) , N (1 , 8) , then MN = ... length units.
(2 or 5 or 6 or 8)

2 ***Complete each of the following :***

(15) Area of parallelogram = ... × ....

(16) If A , B and C are natural numbers , then (A × B) × C = A × (B × C) called .... property.

(17) The set of even numbers ∩ the set of odd numbers = ...

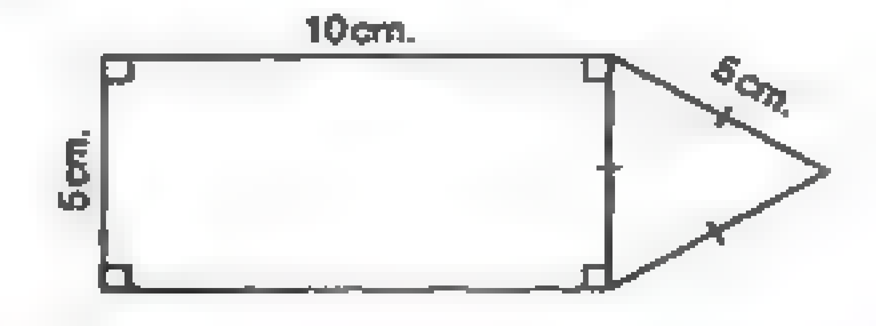
(18) The perimeter of the equilateral triangle whose side length is l cm. = ... cm.

(19) The set of prime numbers which are less than 17 is ....

(20) The square whose perimeter is 32 cm. , its area = ... cm².

3 ***Answer the following :***

(21) Find the perimeter of the opposite figure :



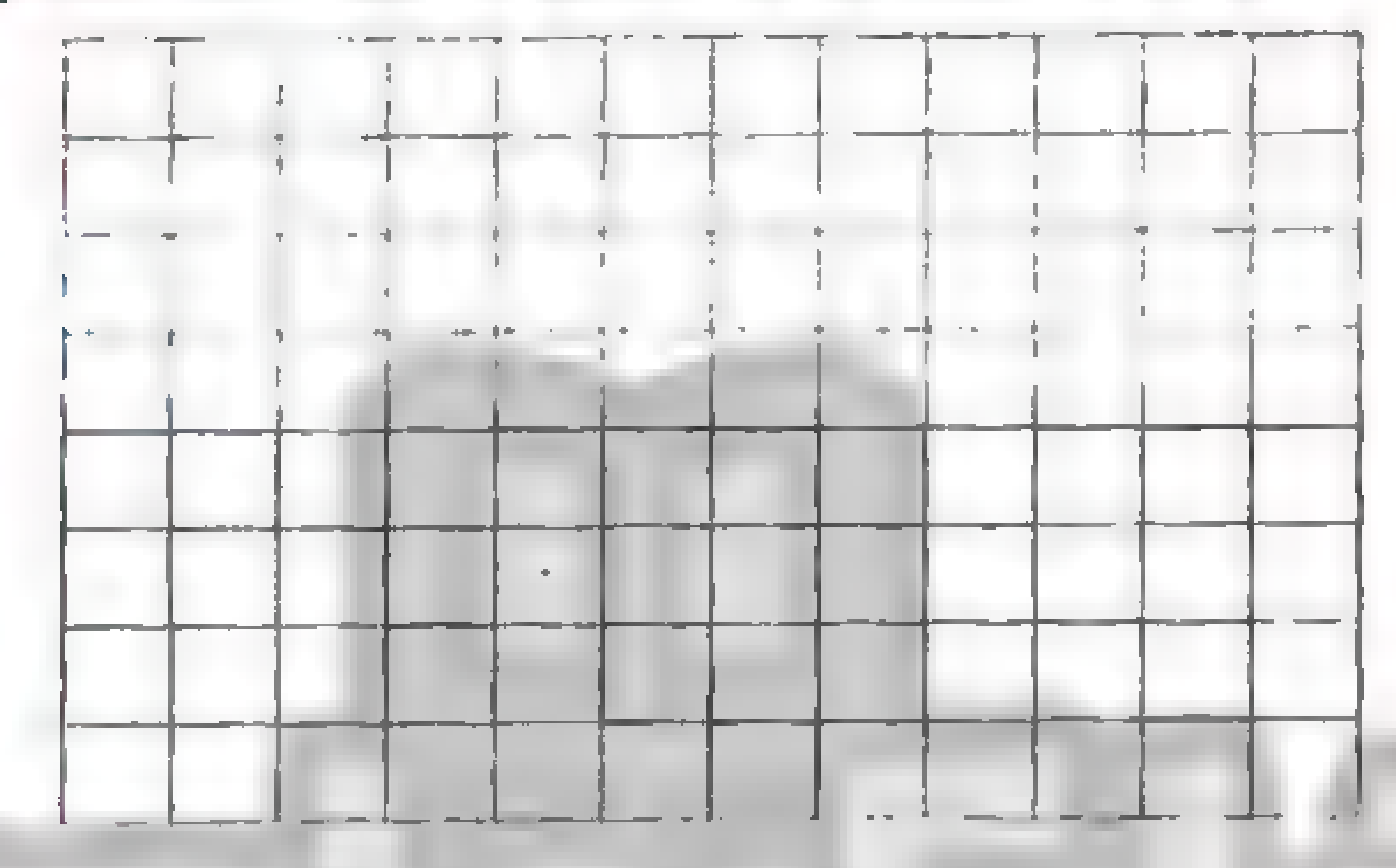
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(22) In the cartesian coordinates plane , locate the points

A (2 , 2) , B (5 , 2) , C (5 , 6)

[a] Find the length of each of $\overline{AB}$ and $\overline{BC}$

[b] Draw the image of figure ABC by reflection in $\overleftrightarrow{BC}$



(23) Use the properties of the operations to find :

[a] 872 + 199 + 128 + 801 [b] 56 × 1001

....

....

(24) Solve the equations :

[a] $2x + 9 = 21$, $x \in \mathbb{N}$ [b] $x - 5 = 2$, $x \in \mathbb{N}$

....

....

(25) If the number x exceeds twice the number y by 9

Write the mathematical relation between x and y

....

(26) Two circles the diameter of the first is 10 cm. and the diameter of the second is 15 cm. , find the difference between their circumferences. ($\pi = 3.14$)

....

(27) A square shaped piece of land with diagonal length 25 m. and a square shaped house with side length 15 m. has been built on it and the left part used as a garden , find the area of the garden.



....

....

(28) Use the properties of commutative and associative in ℕ to find the result of : $8 \times 43 \times 125$

....

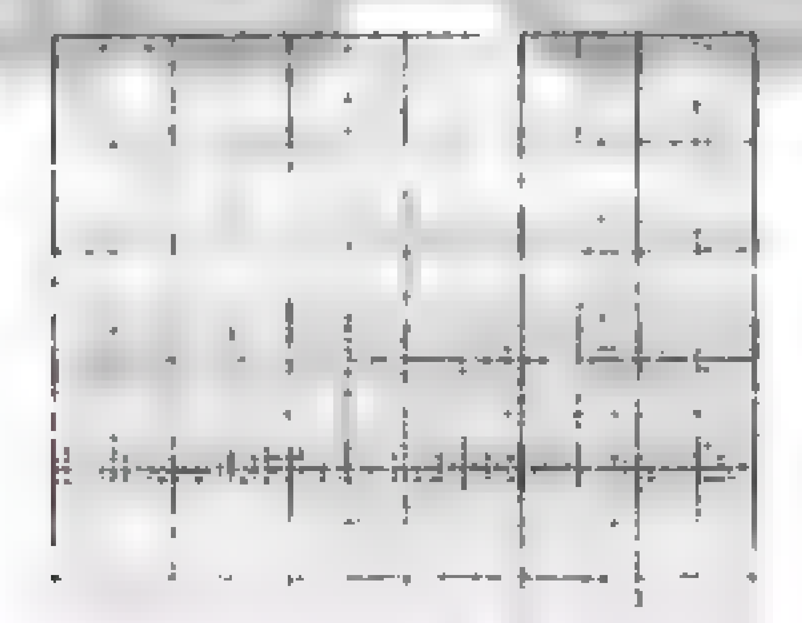
(29) Solve the equation : $x \times 3 + x \times 60 = 4 \times 63$

....

(30) The following table shows the frequency distribution of the number of work hours of 50 workers :

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the histogram which represents these data.



Model 5

Answer the following questions :

1 ***Choose the correct answer :***

(1) If $(x + 2) \times 7 = 7 \times 8$, then $x =$ .... (6 or 7 or 8 or 56)

(2) If the difference between two numbers is 5 the smaller number is y , then the greater number is ....

(5 y or 5 − y or y − 5 or y + 5)

(3) The isosceles triangle has .... line(s) of symmetry.

(1 or 2 or 3 or 4)

(4) The shaded triangle is the image of the other triangle by a ....

(perimeter or translation or reflection or rotation)

(5) The length of diagonal of rhombus its area 20 cm² and the length of the other diagonal is 8 cm. = ... cm. (5 or 10 or 4 or 6)

(6) $\frac{0}{7}$ .... ℕ (∈ or ∉ or ⊂ or ⊄)

(7) The area of a square whose diagonal length 6 cm. is .... cm².

(18 or 36 or 12 or 24)

(8) The additive neutral element in ℕ is .... (0 or 1 or 2 or 3)

(9) If $3x = 12$, then $x + 3 =$ .... (4 or 6 or 7 or 10)

(10) The circumference of the circle = ...

(2 d π or 2 π or π r or 2 π r)

(11) $5 \times (100 - \text{..............}) = 5 \times 99$ (1 or 2 or 99 or 0)

(12) If E is the set of even numbers , then E .... ℕ

(∈ or ∉ or ⊂ or ⊄)

(13) If (5 , 6) , then y coordinate = ... (1 or 6 or 11 or 5)

(14) If $X = \{x : x \in ℕ , 3 < x < 4\}$, then X = ...

(∅ or {3 , 4} or {3} or {4})

2 ***Complete each of the following :***

(15) 2 , 7 , 12 , 17 , ... , ... (in the same pattern)

(16) In the opposite figure :
The length of $\overline{AB}$ = ... length units.

(17) If the longest chord in a circle is 7 cm. , then the circumferene of the circle is .... cm. $\left(\text{where } \pi = \frac{22}{7}\right)$

(18) Adding to the double of x is written as ....

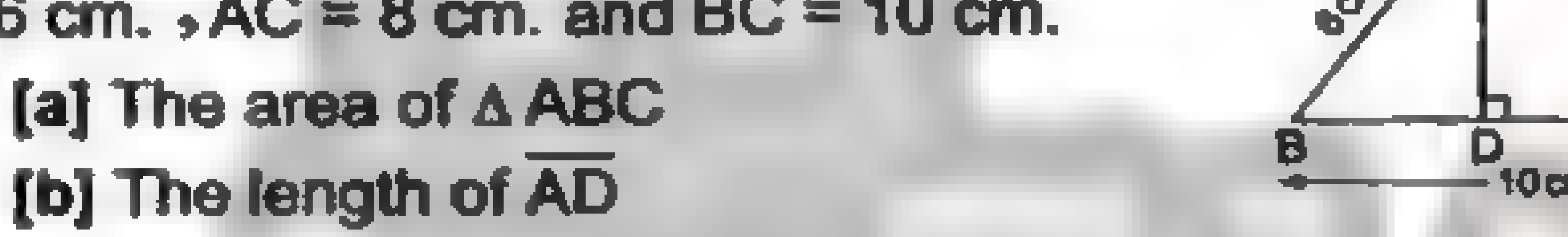
(19) The area of triangle = ... × ....

(20) $\mathbb{N} - \{0\}$ = ...

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3 ***Answer the following :***

(21) ABC is a right-angled triangle at A ,
AB = 6 cm. , AC = 8 cm. and BC = 10 cm.
Find : [a] The area of Δ ABC
[b] The length of $\overline{AD}$



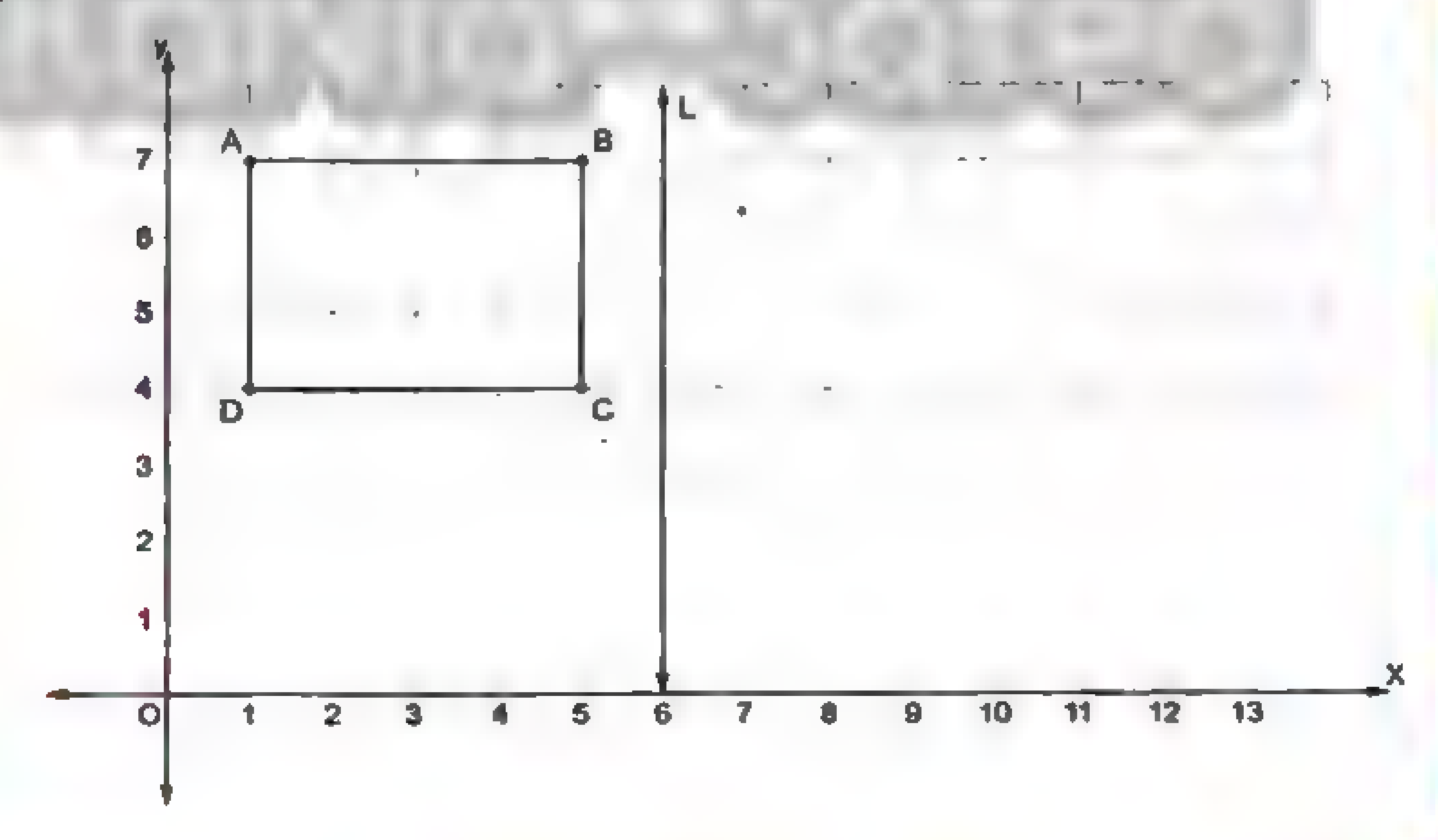
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(22) Use the properties of addition to find : 71 + 82 + 29 + 18

....

(23) In the cartesian coordinate plane , from the following figure :



[a] Complete :

A (.............. , ...) , B (.............. , ...)

C (.............. , ...) , D (.............. , ...)

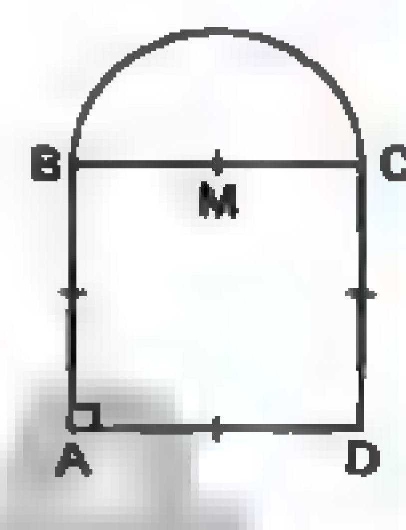
[b] If L is the axis of reflection of the figure ABCD , find the image of the figure by reflection in the straight line L , then complete :

À (.............. , ...) , B̀ (.............. , ...)

C̀ (.............. , ...) , D̀ (.............. , ...)

(24) In the opposite figure :

The perimeter of the square ABCD = 56 cm. , find the perimeter of the whole figure.



....

(25) Use the distribution property to find the value of : 18×99

....

(26) Solve the equation : $2x + 3 = 23$ where $x \in \mathbb{N}$

....

(27) Calculate using commutative and associative properties : $2 \times 347 \times 5$

....

(28) Find the height of the parallelogram with area 48 cm^2 and its base is 8 cm. long.

....

(29) If $x = 3$, $y = 2$ and $z = 5$, find the following :

[a] $x \times y + y \times z$ [b] $(x - y) \times z$

....

....

(30) The opposite bar graph shows the number of pupils in each sport group in a school :

[a] What is the most popular game ?

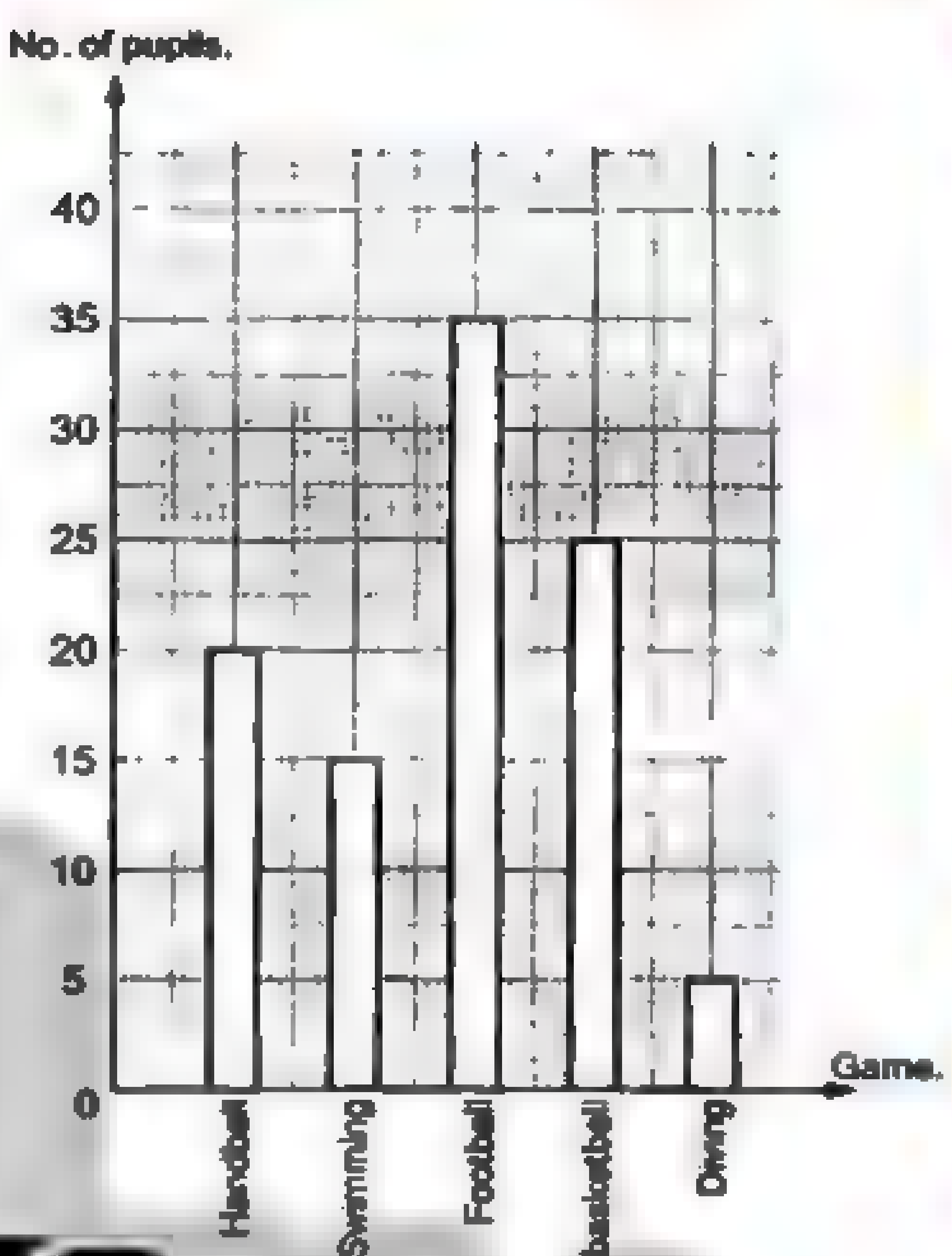
....

[b] What is the least popular game ?

....

[c] What is the total number of pupils ?

....



Model 6

Answer the following questions :

1 *Choose the correct answer :*

(1) If the age of a man is x now , then his age after 7 years is ....

($x+7$ or $x-7$ or $7x$ or $7-x$)

(2) The square whose area is 8 cm^2 , the length of its diagonal = ... cm. (32 or 4 or 8 or 16)

(3) The rhombus has .... line(s) of symmetry.

(zero or 1 or 2 or 4)

(4) The circumference of a circle with diameter length 14 cm. = ... π cm. (7 or 14 or 28 or 16)

(5) If $3x = 15$, $x \in \mathbb{N}$, then $x + 1$ = ... (3 or 4 or 5 or 6)

(6) The least prime number × any prime number = ... number.

(odd or even or prime or otherwise)

(7) If we multiply the number x by 7 , then we subtract from the result 3 , we shall get ....

($7x+3$ or $3x+7$ or $7x-3$ or $3-7x$)



(8) The length of the base of a triangle whose area is 240 cm^2 and its height = 10 cm. is .... cm. (12 *or* 24 *or* 48 *or* 2400)

(9) If $X = \{x : x \in \mathbb{N}, 3 < x \leq 5\}$, then X = ...

({4 , 5} *or* {4} *or* {3 , 4} *or* {5})

(10) The midpoint between (1 , 2) and (7 , 2) is ....

((3 , 2) *or* (4 , 2) *or* (2 , 3) *or* (2 , 4))

(11) .... triangle has three sides are equal in length.

(Obtuse *or* Scalene *or* Equilateral *or* Isosceles)

(12) 37 × 100 – 37 × .... = 37 × 15 (115 *or* 75 *or* 85 *or* 63)

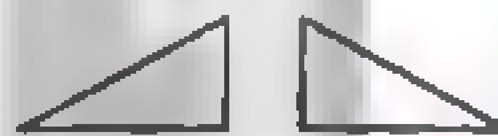
(13) If $x = 2$ and $y = 3$, then $5xy$ = ... (10 *or* 11 *or* 13 *or* 30)

(14) 213 + 57 = 57 + 213 is called .... property. (commutative *or* closure *or* associative *or* additive identity element)

2 ***Complete each of the following :***



(15) The opposite transformation is ....



(16) 8 , 11 , 14 , ... (in the same pattern)

(17) {2 , 3} ∩ {1 , 4} = ...

(18) The area of the parallelogram = ... × ....

(19) 45 × (37 + 63) = 45 × .... = ...

(20) If we add 9 to four times of number z , then we get ....

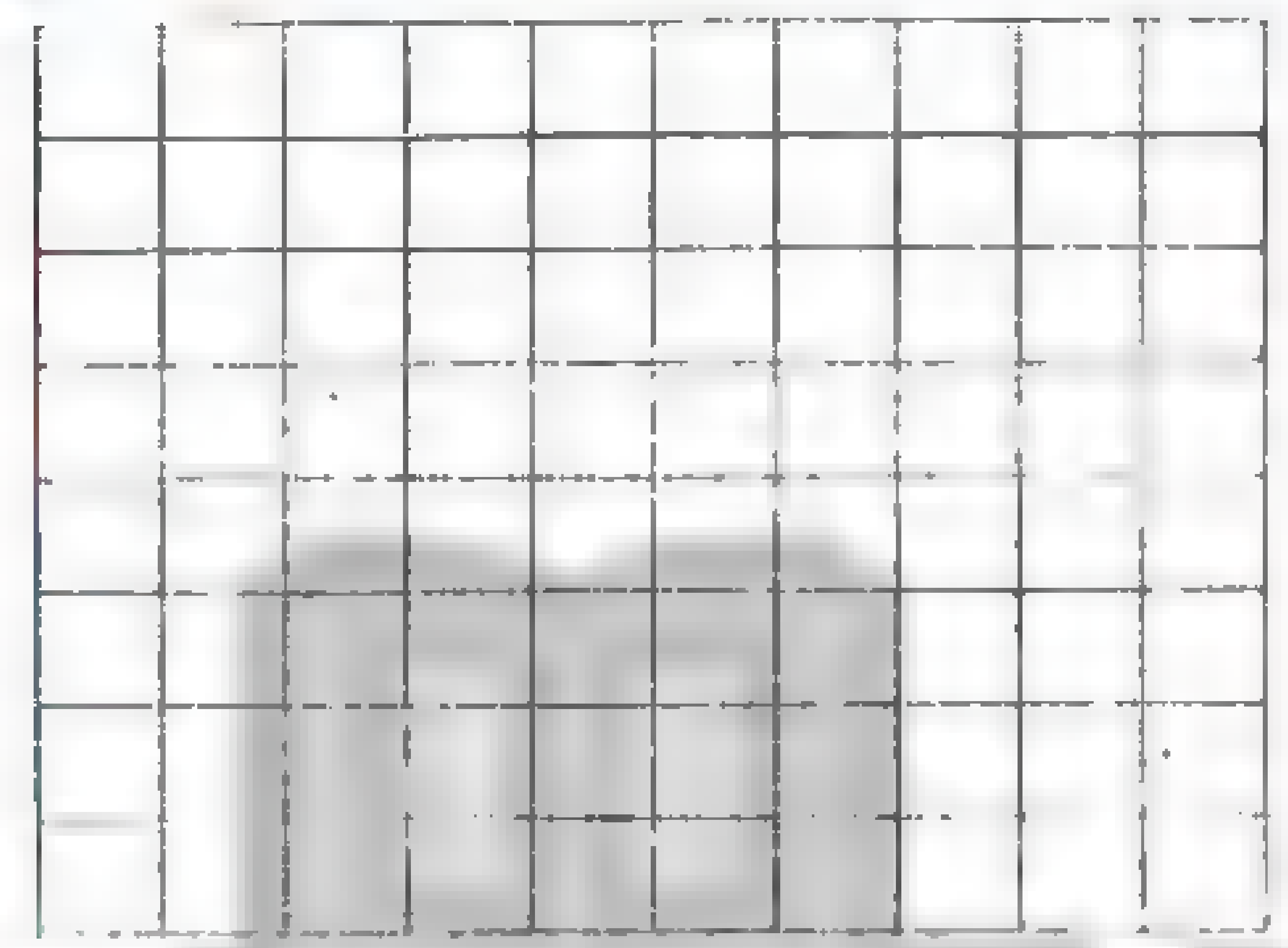
3 ***Answer the following :***

(21) The opposite figure shows a football playground , find the distance around the figure (where $\pi = \frac{22}{7}$)



....

(22) In a coordinate plane , draw the figure ABCD in which A (2 , 3) , B (2 , 5) , C (5 , 5) and D (5 , 2) , then draw its image by reflection across $\overleftrightarrow{CD}$



(23) Use the properties of addition operation in ℕ to find the result of :

72 + 89 + 28 + 11

....

(24) Solve the following equation in ℕ : $\frac{1}{7}x - 2 = 3$

....

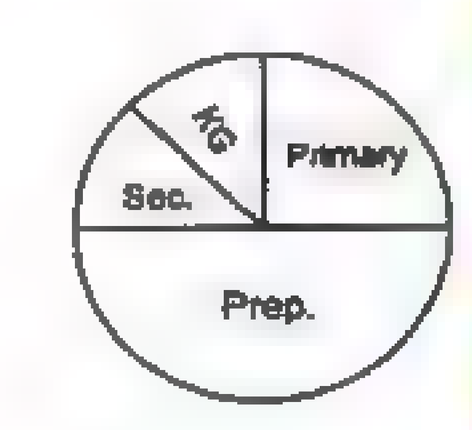
(25) Find the area of a rhombus with diagonal length 6 cm. and 9 cm.

....

(26) Use the distributive property to find : 26 × 999

....

(27) Noticing the opposite pie graph , a school has 1000 students :



[a] What is the number of students in the primary stage ?

....

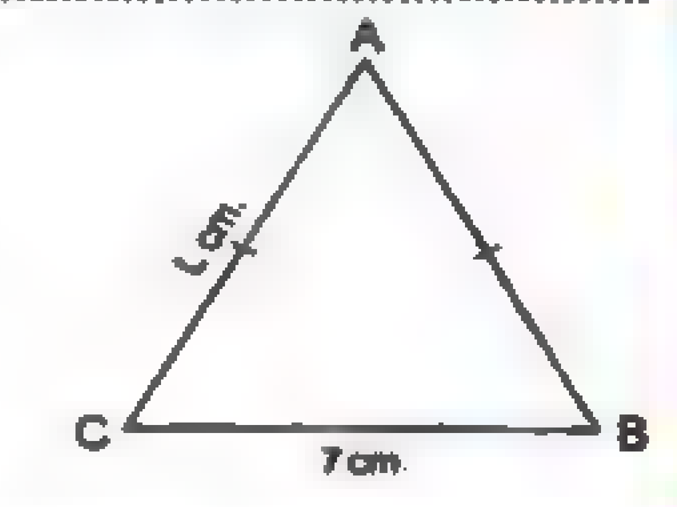
[b] What is the number of students in the KG stage ?

....

(28) Use the properties of multiplication to find : $8 \times 69 \times 125$

....

(29) In the opposite figure :



ABC is an isosceles triangle.

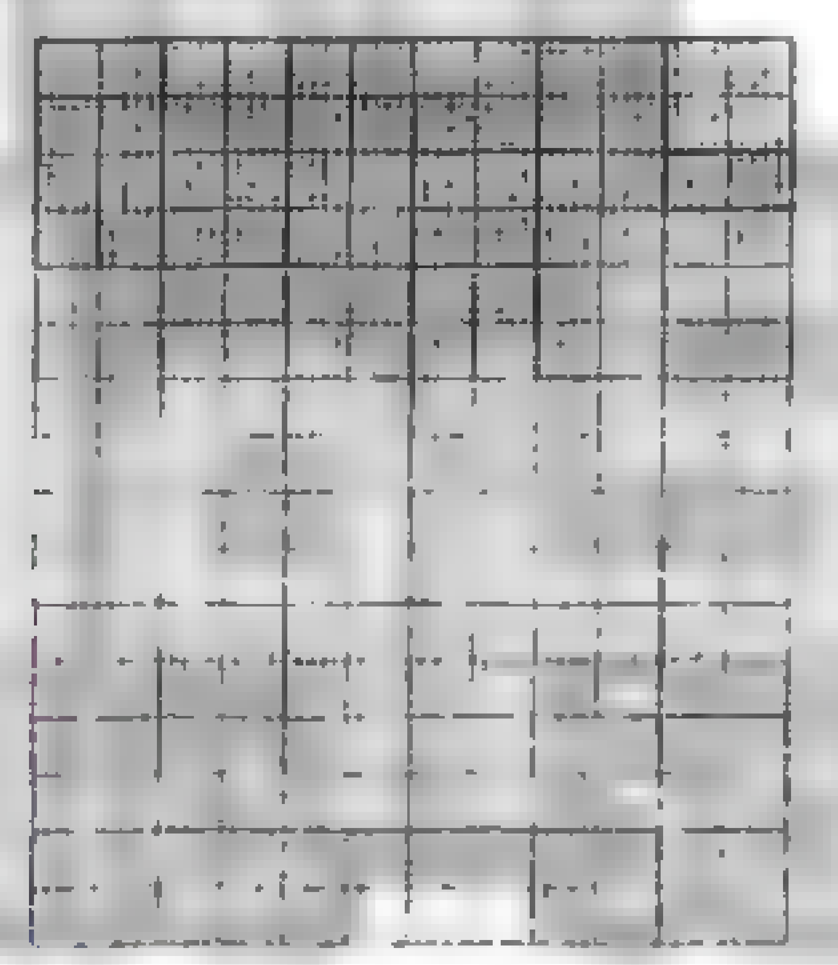
Find the perimeter of the triangle.

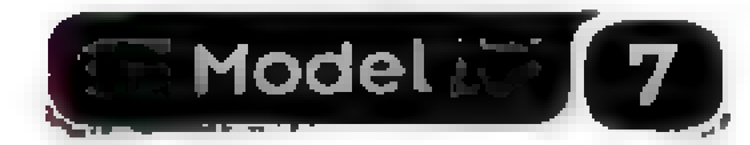
....

(30) The following table represents the marks of students in math exam :

Sets	10 –	20 –	30 –	40 –
Frequency	7	12	10	9

Draw the frequency polygon of these data.





Answer the following questions :

1 ***Choose the correct answer :***

(1) The number of axes of symmetry of rhombus equals ....

(zero or 1 or 2 or 4)

(2) If $7 \times 21 = 21 \times x$, then $x =$ .... (7 or 3 or 21 or 147)

(3) Sama saved L.E. y and her father gave her L.E. 12 , then she has L.E. .... ($y - 12$ or $12y$ or $\frac{y}{12}$ or $y + 12$)

(4) The area of square whose perimeter is 24 cm. equals .... cm^2
(24 or 36 or 16 or 20)

(5) 0.15 .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(6) If $x + 1 = 3$, then $2x =$ .... (2 or 3 or 4 or 8)

(7) 1, 4, 9, 16, ... (in the same pattern)
(32 or 24 or 27 or 25)

(8) If the sum of two numbers A and B is 35, then B = ...
(A − 35 or 35 A or 35 − A or A + 35)

(9) If $y = 5x + 9$, then the constant is .... (5 or 6 or 9 or 8)

(10) The shaded triangle is the image of the other triangle by a ....
(reflection or rotation or translation)

(11) The multiplicative neutral element in $\mathbb{N}$ × the additive neutral element in $\mathbb{N}$ = ... (0 or 1 or 2 or 3)

(12) If the base length of a triangle is 8 cm. and its height is 5 cm., then its surface area = ... cm^2 (30 or 13 or 40 or 20)

(13) The area of a rhombus whose diagonals 10 cm. and 20 cm. is .... cm^2 (200 or 30 or 100 or 400)

(14) If $x\,(75 + 10) = 9 \times 85$, then $x =$ .... (5 or 85 or 9 or 8)

---

2 ***Complete each of the following :***

(15) $\frac{\text{The circumference of the circle}}{\text{The length of the diameter}} =$ ....

(16) The natural number between $\frac{9}{3}$ and $\frac{15}{3}$ is ....

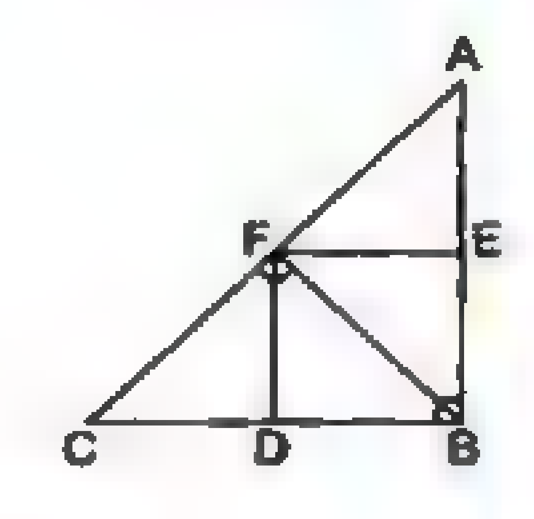
(17) The set of even numbers (E) ∪ the set of odd numbers (O) = ...

(18) The length of the diagonal of a square with area 72 cm^2 = ... cm.

(19) $53 \times 164 + 47 \times$ .... $= 164 \times 100$

(20) The perimeter of equilateral triangle whose side lengthis x cm. = ... cm.

3 *Answer the following :*



(21) **In the opposite figure , complete :**

[a] Δ AEF is the image of Δ BEF by reflection in ……………

[b] Δ ABF is the image of Δ CBF by reflection in ……………

[c] Δ EBF is the image of Δ …………… by reflection in $\overleftrightarrow{BF}$

(22) If $x = 2$, $y = 1$ and $z = 7$, find the value of :

[a] $z + x - y$ [b] $\frac{z - y}{x}$

……………………………………………………………………………………

(23) Three times of a natural number x is 8 more than the multiplicative neutral , express this information in an equation and solve it for x

……………………………………………………………………………………

……………………………………………………………………………………

(24) Use the commutative and the associative properties to find the result of :

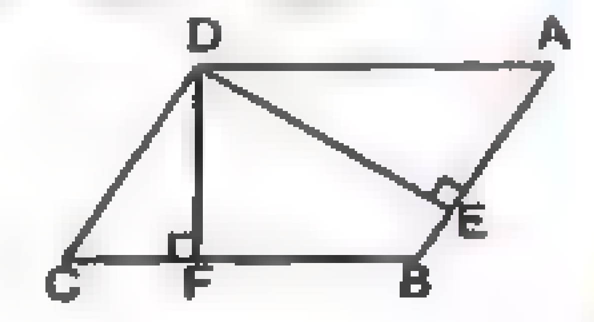
[a] 4 × 175 × 25 [b] 102 + 175 + 98

……………………………………………………………………………………

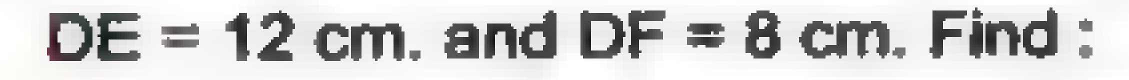
……………………………………………………………………………………



(25) **In the opposite figure :**



ABCD is parallelogram in which AB = 10 cm. ,



DE = 12 cm. and DF = 8 cm. Find :



[a] The area of the parallelogram ABCD



[b] The length of $\overline{BC}$

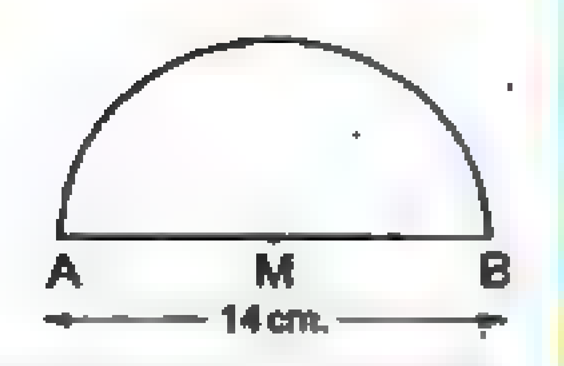
……………………………………………………………………………………

……………………………………………………………………………………

(26) Use the distribution property in ℕ to find : 215 × 101

……………………………………………………………………………………

(27) Calculate the perimeter of the opposite figure where AB = 14 cm. $(\pi = \frac{22}{7})$



....

(28) If $X = \{x : x \in \mathbb{N}, 1 \le x < 5\}$, $Y = \{4, 5, 6\}$

Find : [a] $X \cap Y$ [b] $X \cup Y$ [c] $X - Y$

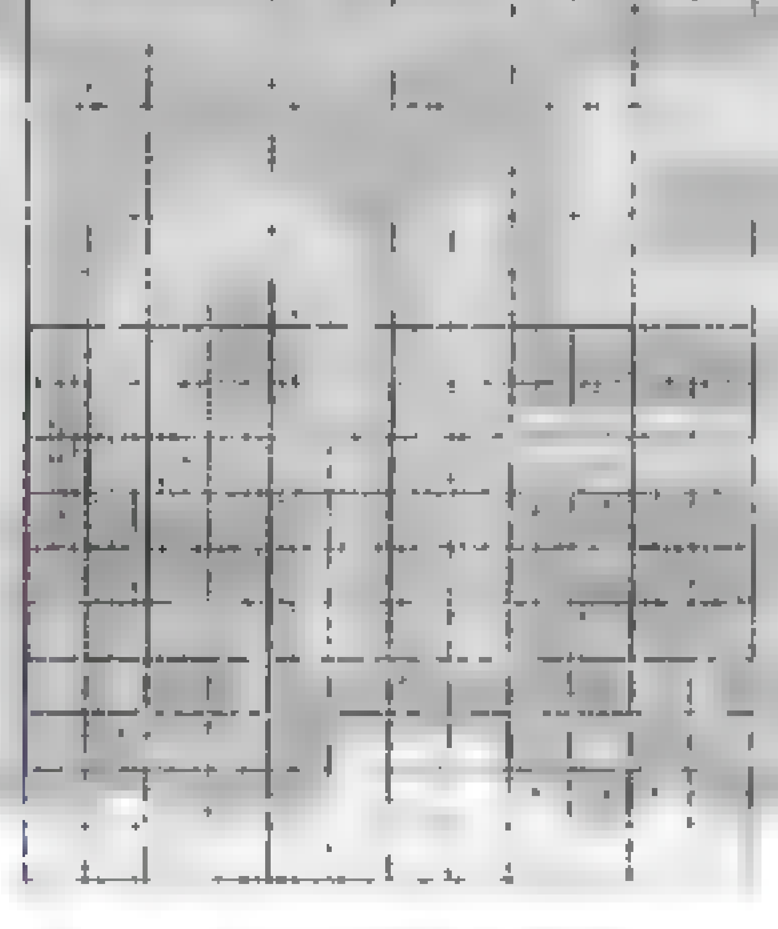
....

(29) Solve the equation : $x + 3 = 12$ where $x \in \mathbb{N}$

....

(30) Represent the following data by a frequency polygon :

Sets	4 –	6 –	8 –	10 –	Total
Frequency	4	6	5	10	25



Model 8

Answer the following questions :

1 *Choose the correct answer :*

(1) The area of the largest rectangle whose perimeter is 24 cm. = ... cm^2 (15 or 36 or 72 or 144)

(2) If y ÷ 10 = 50 , then y = ... (50 or 100 or 5 or 500)

(3) The square whose diagonal length = 8 cm. , its area = ... cm^2 (64 or 32 or 16 or 8)

(4) $\frac{9-5}{3-3}$ = ... (zero or 3 or 4 or meaningless)

(5) If X = $\{x : x \in \mathbb{N} , x \leq 2\}$, then X = ...
({0 , 1} or {1} or {0 , 1 , 2} or ∅)

(6) If y = 3 x + 5 , then the constant is .... (y or x or 3 or 5)

(7) If the side lengths of a triangle are equal in length , then the triangle is .... triangle. (scalene or isosceles or equilateral)

(8) Subtract 4 from the number a the symbolic expression is ....
(2 a − 4 or a + 4 or a − 4 or 2 a + 4)

(9) If $x + 7 = 9$, $x \in \mathbb{N}$, then x = ... (16 or 2 or 11 or 13)

(10) If the ordered pair (5 , 2) = (5 , y) , then y = ...
(2 or 3 or 4 or 5)

(11) If A (2 , 3) , B (2 , 7) , then the midpoint of $\overline{AB}$ is ....
((10 , 4) or (2 , 5) or (2 , 10) or (0 , 9))

(12) A circumference of a circle is 22 cm. , then its diameter length = ... cm. (Where $\pi = \frac{22}{7}$) (3.5 or 7 or 8 or 11)

(13) (5 − 9) .... $\mathbb{N}$ (∈ or ∉ or ⊂ or ⊄)

(14) The shown transformation is called .... b|d
(reflection or rotation or translation)

2 Complete each of the following :

(15) A triangle whose area = 120 cm^2 , and its height = 10 cm. , then its base length = ... cm.

(16) The multiplicative neutral element in $\mathbb{N}$ is ....

(17) 47 × (36 + 64) = 47 × .... = ...

(18) If 5 + 0 = 0 + 5 = 5 , then it is called .... property.

(19) The set of even numbers − the set of odd numbers = ...

(20) The number of axes of symmetry of the rhombus is ....

3 Answer the following :

(21) Which is greater in area ?
A parallelogram of base 10 cm. and corresponding height 6 cm. or a rhombus of diagonals lengths 12 cm. and 16 cm.

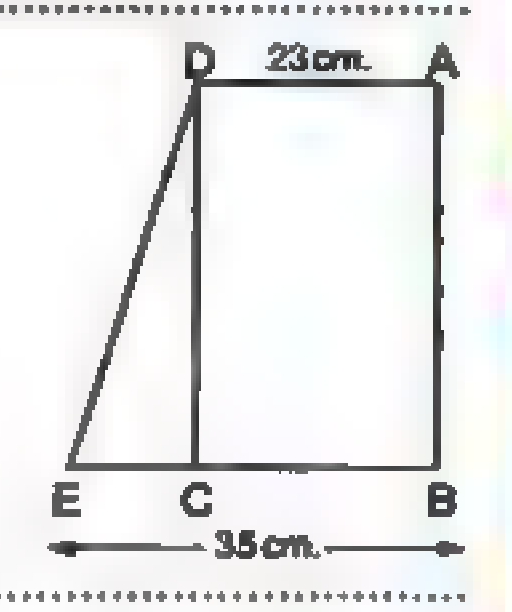
....

(22) Solve the following equation : $5x - 7 = 33$, $x \in \mathbb{N}$

....

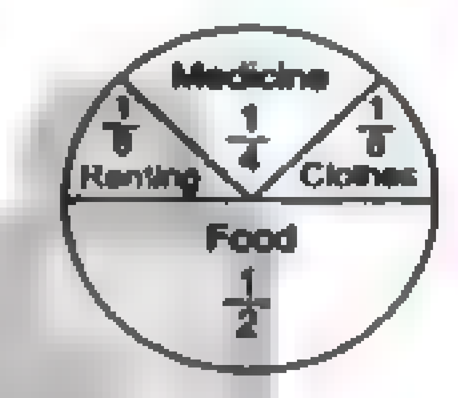
(23) The length of the diameter of the wheel of a bicycle is 56 cm.
Calculate the covered distance if the wheel turns one turn and what is the number of turns to cover distance of 352 metres ?
(Where $\pi = \frac{22}{7}$)

....



(24) In the opposite figure :
ABCD is a rectangle of area 828 cm².
$E \in \overrightarrow{BC}$, AD = 23 cm. and BE = 35 cm.
Find the area of Δ DCE

....

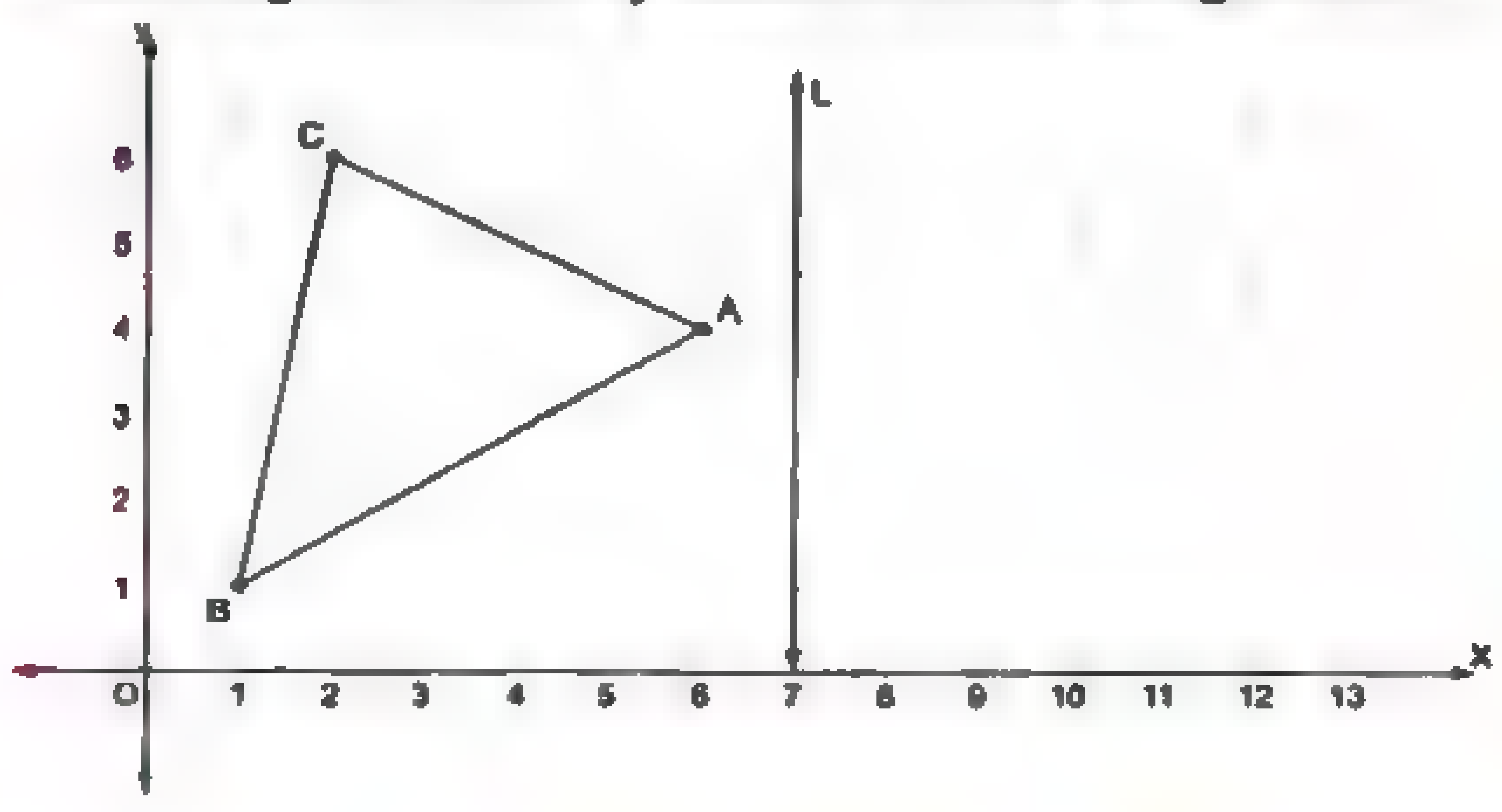


(25) An employee spends his salary as follows :
$\frac{1}{8}$ of it to clothes , $\frac{1}{2}$ of it to food
, $\frac{1}{4}$ of it to medicine and $\frac{1}{8}$ of it to renting.
If his salary was L.E. 1 600
, then find the spending of food.



....

(26) In the cartesian coordinates plane , from the following figure :
[a] Complete :
A (........ , ...) , B (........ , ...) and C (........ , ...)
[b] If L is the axis of reflection of the Δ ABC , draw Δ A̕B̕C̕ the image of Δ ABC by reflection in the straight line L



(27) Using the properties of commutation , distribution and association in $\mathbb{N}$, find the value of each of the following :

[a] $137 \times 36 - 37 \times 36$ [b] $28 + 59 + 72 + 41$

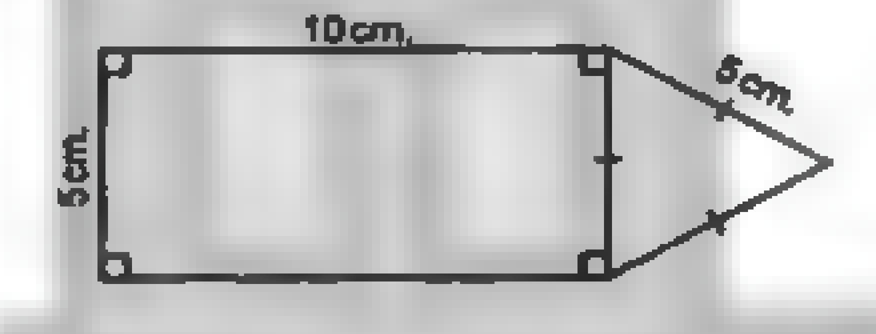
[c] $8 \times 81 \times 125$

....

....

....

(28) Find the perimeter of the opposite figure :



....

(29) Use the distribution property to find the value of : 519×99

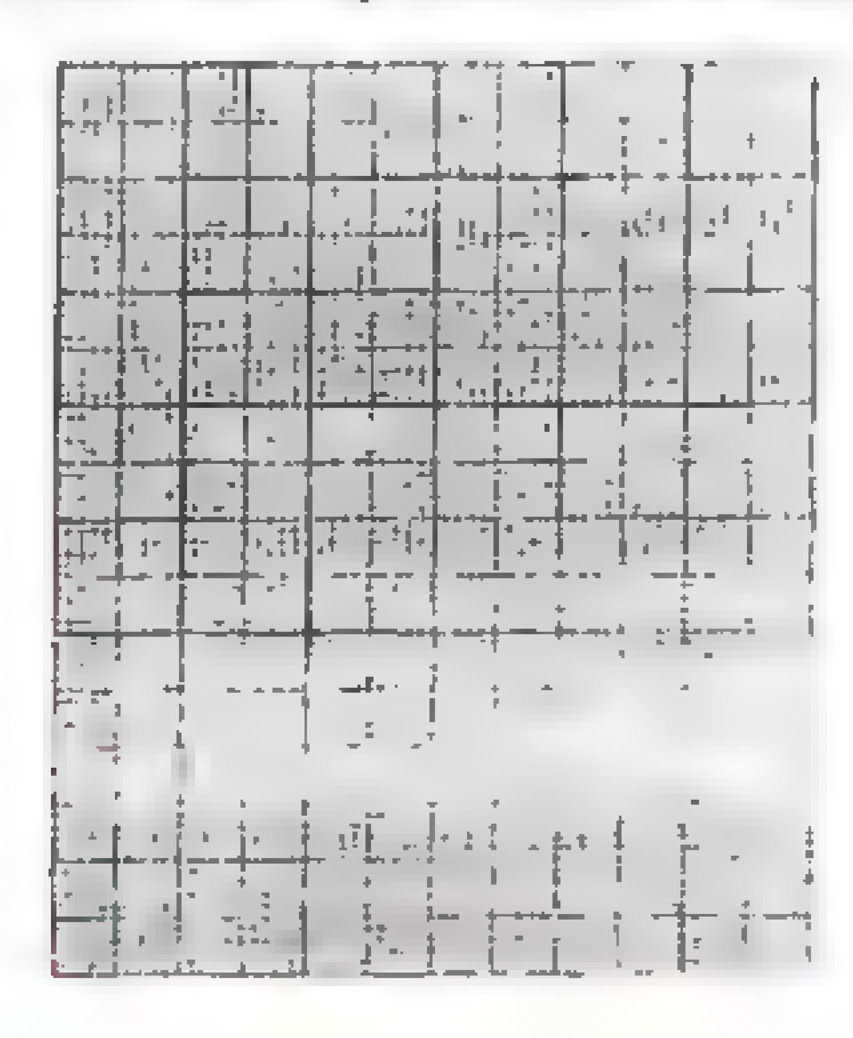
....

(30) The following table shows the marks of 40 pupils in English exam :

Sets	10 –	20 –	30 –	40 –	Total
Frequency	6	k	14	12	40

[a] Find the value of k

[b] Represent these data by the frequency polygon.



Model 9

Answer the following questions :

1 ***Choose the correct answer :***

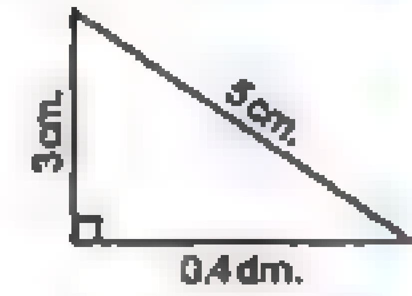
(1) If we multiply the number x by 7 , then we subtract from the result 4 , we shall get ....

($7x-4$ or $4x+7$ or $7x-3$ or $3-7x$)

(2) There are .... axes of symmetry of an equilateral triangle.

(0 or 1 or 2 or 3)

(3) Area of the opposite triangle is .... cm^2



(12 or 24 or 43 or 6)

(4) If x is an odd number , then $x+2$ is ....

(even or odd or prime or otherwise)

(5) $\{5 , 6 , 7\}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(6) If $3x = 15$, $x \in \mathbb{N}$, then $x - 1 =$ .... (5 or 4 or 3 or 2)

(7) The area of square whose diagonal length is 8 cm. is .... cm^2

(10 or 16 or 32 or 64)

(8) If $X = \{x : x \in \mathbb{N} , 5 \le x < 7\}$, then $X =$ ....

($\{5\}$ or $\{6\}$ or $\{5 , 6\}$ or $\{5 , 6 , 7\}$)

(9) If the sum of two numbers x and y is 20 , then y = ...

($x-20$ or $20-x$ or $x+20$ or $\frac{x}{20}$)

(10) If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. (where $\pi = \frac{22}{7}$)

(3.7 or 7 or 22 or 44)

(11) A parallelogram in which the lengths of two adjacent sides are 5 cm. and 7 cm. , then length of the smaller height = 4 cm. , then its area = ... cm^2 (20 or 10 or 28 or 14)

(12) If A (3 , 1) , B (3 , 9) , then the midpoint of $\overline{AB}$ is ....

((6 , 10) or (3 , 10) or (3 , 5) or (0 , 10))

(13) The perimeter of the equilateral triangle whose side length L cm. is .... cm. (L + 3 or $\frac{1}{3}$ L or L − 3 or 3 L)

(14) The set of odd numbers .... the set of natural numbers. (∈ or ∉ or ⊂ or ⊄)

2 ***Complete each of the following :***

(15) If A × 60 + A × 4 = 3 × 64 , then A = ...

(16) 2 , 7 , 12 , 17 , ... , ... (In the same pattern)

(17) The additive neutral element in ℕ is ....

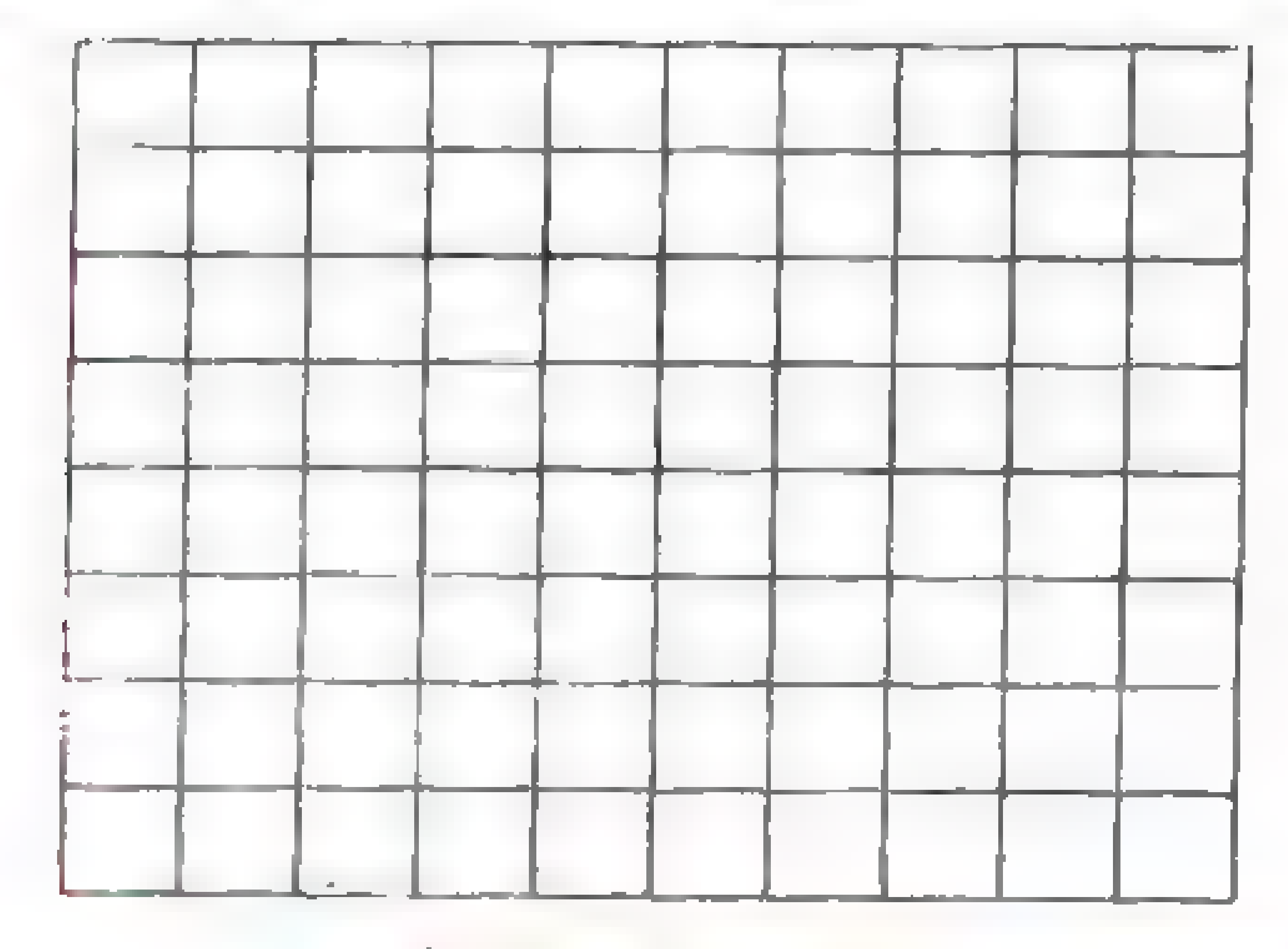
(18) The perimeter of square whose side length is 10 cm. = ... cm.

(19) Area of the triangle = $\frac{1}{2}$ the length of its base × ....

(20) For any natural numbers x , y and z where $(x \times y) \times z = x \times (y \times z)$ is called .... property.

3 ***Answer the following :***

(21) In a 2-dimensional coordinate plane : Draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of the triangle ABC by reflection across $\overleftrightarrow{BC}$



(22) Five even natural numbers , the greatest number is $x + 13$, write down these numbers.

....

(23) The area of a rectangle equals the area of a square whose diagonal length is 12 cm. , find the perimeter of the rectangle if its width equals 8 cm.

....

(24) Solve each of the following equations in ℕ :

[a] $\frac{1}{6} x - 3 = 2$ [b] $3x + 7 = 19$

....

....

(25) Find the area of rhombus whose diagonals lengths 20 cm. and 10 cm.

....

(26) Calculate using commutative , associative and distributive properties :

[a] 642 + 171 + 358 + 29 [b] 25×304

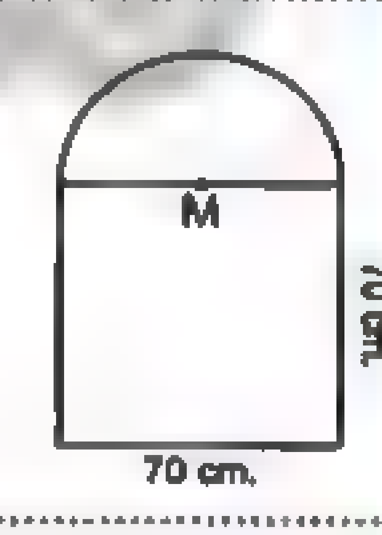
....

....

(27) If the number x exceeds twice the number y by 7 , write down the mathematical relation which relates x by y

....

(28) In the opposite figure , there is a window which has the form of square whose side length is 70 cm. and above it there is a semicircle. Calculate the perimeter of the window. $\left(\text{where } \pi = \frac{22}{7}\right)$



....

(29) Use distributive property to find the result of : 18×99

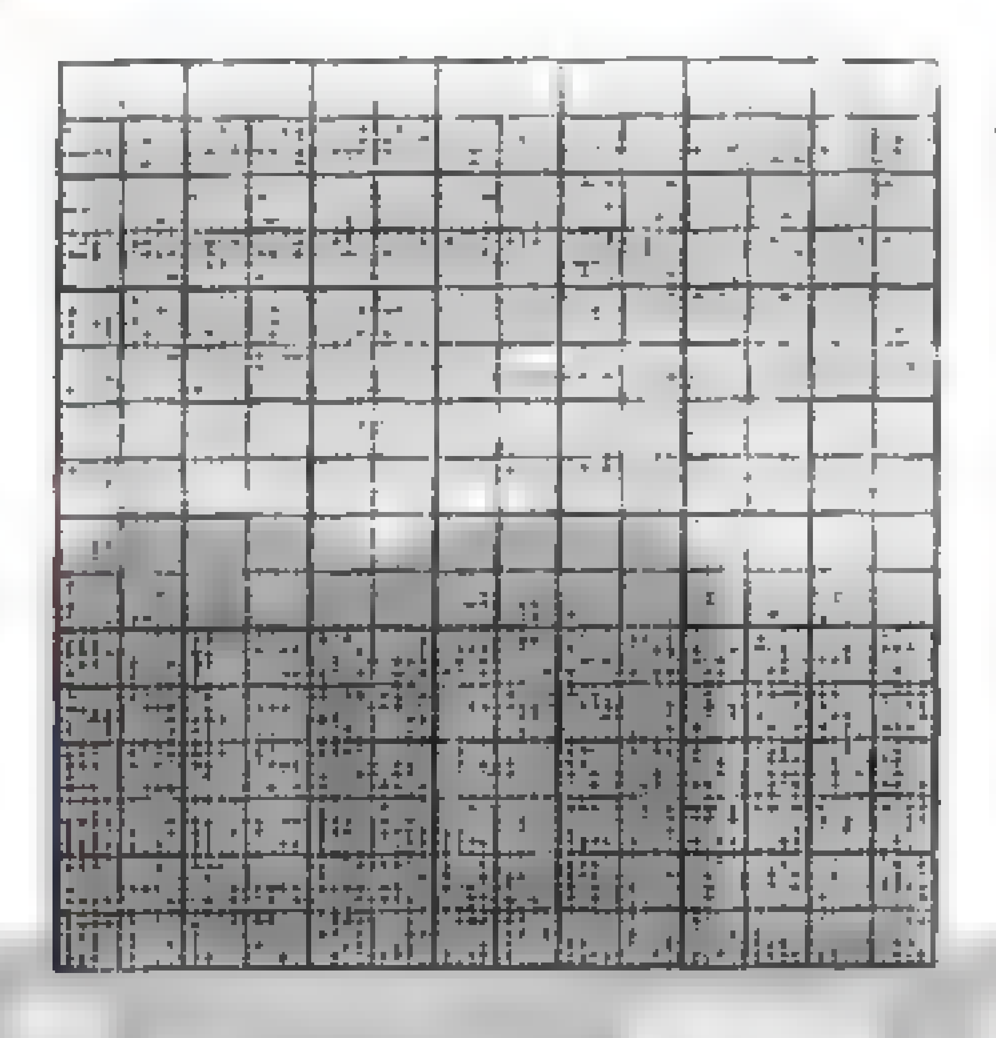
....

(30) The following table shows the marks of 40 pupils in an exam :

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	5	7	12	A	7	40

[a] Find the value of A

[b] Draw the histogram and the frequency polygon which represent these data.



Model 10

Answer the following questions :

1 ***Choose the correct answer :***

(1) The diameter length of the circle whose circumference is 88 cm. equals .... cm. (28 or 14 or 21 or 7)

(2) If $x + 8 = 15$, $x \in \mathbb{N}$, then $x =$ .... (3 or 7 or 6 or 5)

(3) Add 5 to double number a is written as .... (5 a + 2 or 5 + a or 2 a + 5 or 2 a − 5)

(4) The area of the rhombus whose side length is 8 cm. and its height is 4 cm. equals .... cm² (12 or 16 or 32 or 64)

(5) $75 \times 99 = 75 \times (100 -$ ....$)$ (100 or 75 or 1 or 0)

(6) The smallest natural number is .... ($\frac{1}{7}$ or 0 or 1 or $\frac{1}{2}$)

(7) The opposite geometric transformation is ....

(reflection or rotation or translation)

(8) The square has .... lines of symmetry.

(1 or 2 or 4 or infinite)

(9) If $7y = 84$, then $\frac{1}{2}y =$ .... (6 or 12 or 21 or 42)

(10) If $\mathbb{N}$ is the set of natural numbers, $a \in \mathbb{N}$, $b \in \mathbb{N}$, then $a + b$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(11) The ordered pair $(2, 7) = (x, 7)$, then $x =$ ....
(5 or 4 or 7 or 2)

(12) The triangle whose base length is 5 cm. and the corresponding height of it is 8 cm., its area = ... cm²
(13 or 20 or 26 or 40)

(13) If the difference between two numbers a and b is 35, a is the greater number, then b = ...
($35 - a$ or $35 + a$ or $a - 35$ or $\frac{a}{35}$)

(14) If $X = \{x : x \in \mathbb{N}, 2 \le x \le 3\}$, then X = ...
($\{2, 3\}$ or $\{2\}$ or $\{3\}$ or $\varnothing$)

2 ***Complete each of the following :***

(15) The square whose perimeter is 36 cm., then its area = ... cm²

(16) The next number in the pattern : 1, 4, 7, 10, ...

(17) 425 + 575 = 575 + ... (.............. property)

(18) On the coordinate plane : M (5, 1), N (5, 6), then MN = ... length units.

(19) If x is an even number, then $(x - 1)$ is an .... number.

(20) If $87 \times 15 = 87 \times x + 87 \times 10$, then $x =$ ....

3 ***Answer the following :***

(21) Use the properties of the operations to find :

[a] 872 + 199 + 128 + 801 [b] 56 × 1 001

....

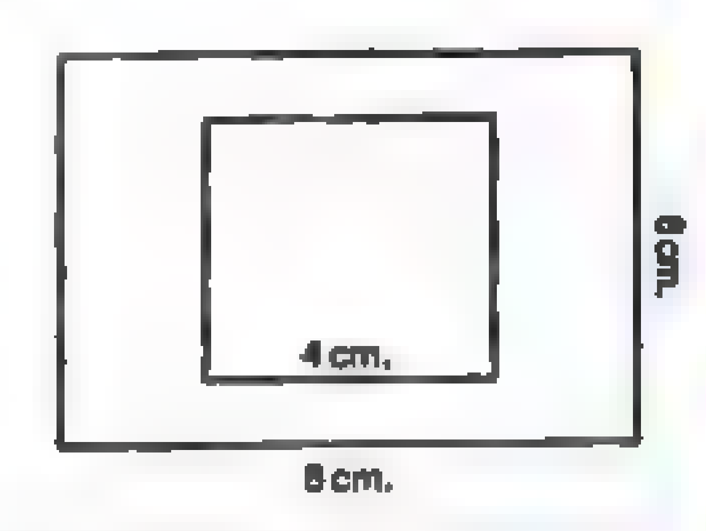
....

(22) If the age of a man now is x years , find :

[a] The age of the man after 5 years ....

[b] The age of the man since 7 years ....

(23) Find the area of the shaded part where the outer shape is a rectangle and the inner shape is a square.



....

(24) Solve the equations :

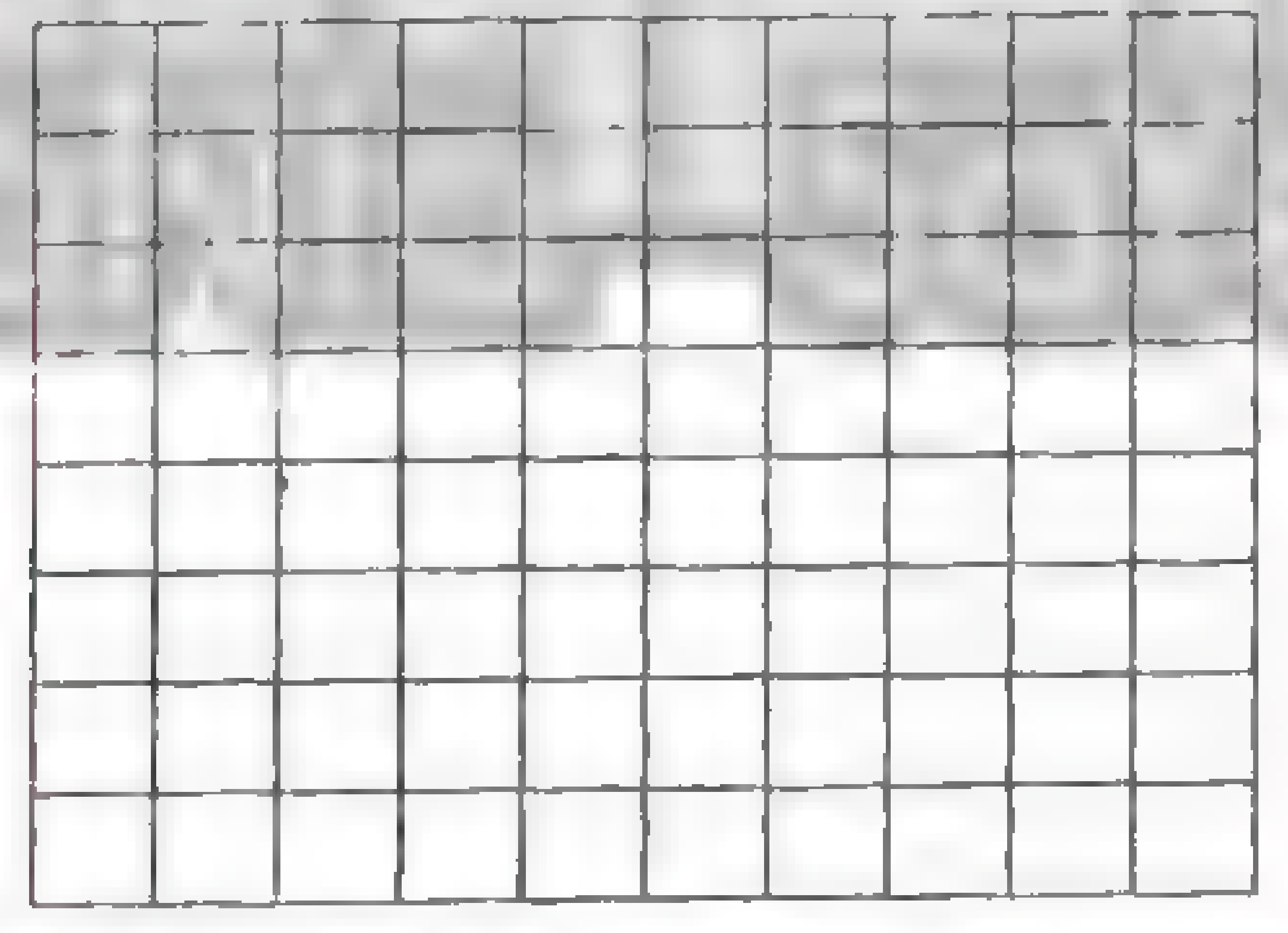
[a] $2x - 3 = 11$, $x \in \mathbb{N}$

[b] $\frac{1}{2}x + 8 = 10$, $x \in \mathbb{N}$

....

....

(25) In a coordinate plane , locate the points A (5 , 0) , B (9 , 0) , C (9 , 4) and D (5 , 4) , name the shape ABCD , then draw the image of ABCD by reflection across $\overleftrightarrow{AD}$



(26) By using the properties of multiplication find the value of :

[a] $4 \times 31 \times 25$

[b] 5×99

....

....

(27) If the height of a parallelogram is 8 cm. and the length of corresponding base is 10 cm. , calculate the area of the parallelogram.

....

(28) If a = 5 , b = 2 and c = 3 , find the value of :

[a] $a + c - b$ [b] $\frac{a - c}{b}$

....

....

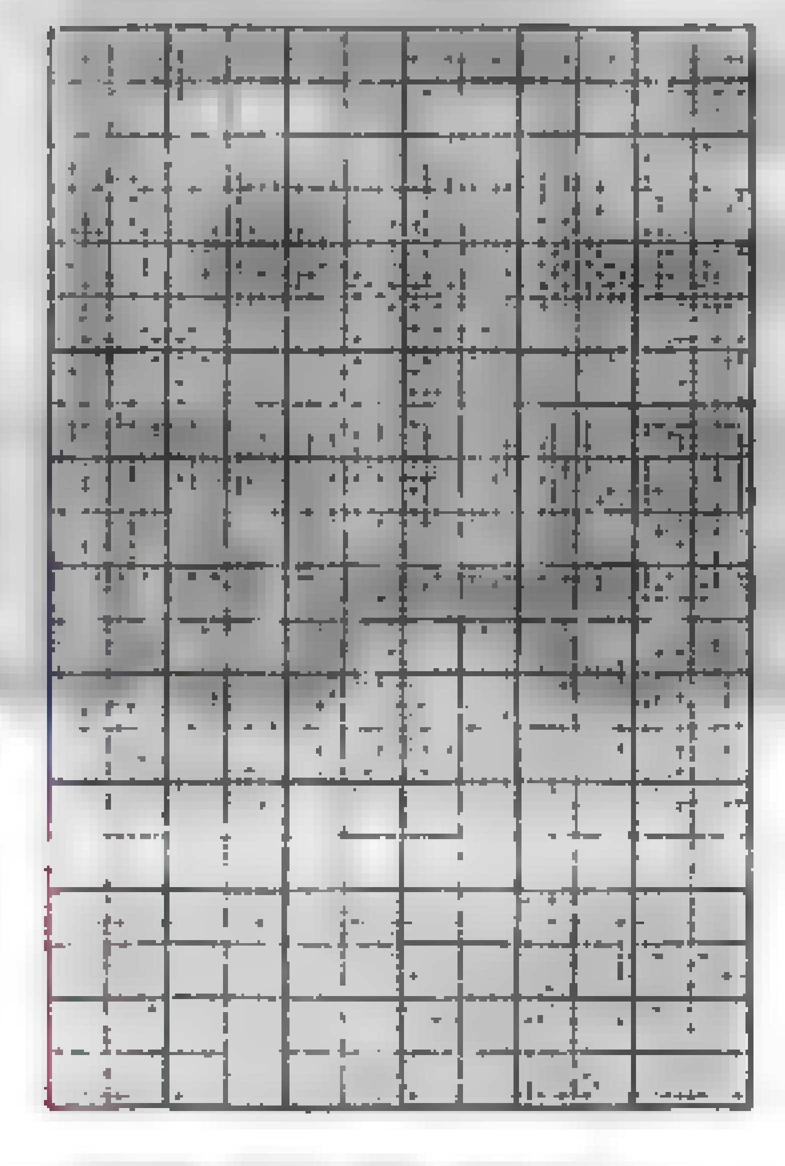
(29) Find the eighth term in the sequence : 1 , 3 , 6 , 10 , ...

....

(30) The following table shows the marks of 50 pupils in exam of Arabic in one month :

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

Draw a histogram which represents these data.



Model 11

Answer the following questions :

1 ***Choose the correct answer :***

(1) 5 is subtracted from twice the number x = ...

($5 - x$ or $2x - 5$ or $5x + 2$ or $5 - 2x$)

(2) The diameter length of a circle whose circumference is 88 cm. = ... cm. (28 or 14 or 7 or 21)

(3) Youssef saved L.E. x and his father gave him L.E. 15, then he has L.E. .... ($x + 15$ or $15 - x$ or $x - 15$ or x)

(4) If the area of a square is 200 cm², then the length of its diagonal is .... cm. (16 or 18 or 15 or 20)

(5) If $x = 3$, $y = 5$, then $4x - 2y =$ .... (2 or 5 or 14 or 22)

(6) If $\mathbb{N}$ is the set of natural numbers, $a \in \mathbb{N}$, $b \in \mathbb{N}$, then $a \times b$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(7) $\frac{0}{7}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(8) The number of symmetry axes of an equilateral triangle = ... (3 or 2 or 1 or 0)

(9) If $6 \times 12 = 12 \times x$, then $x =$ .... (4 or 6 or 7 or 8)

(10) If the side length of a square is L, then its perimeter = ... (L + 4 or L − 4 or 2 L or 4 L)

(11) $\{1, 2, 3\}$ .... O ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(12) If $3x + 7 = 19$, $x \in \mathbb{N}$, then $x =$ .... (2 or 3 or 4 or 5)

(13) The area of a triangle whose base length 5 cm. and corresponding height 6 cm. is .... cm² (30 or 15 or 25 or 36)

(14) The opposite geometric trans formation is .... (translation or rotation or reflection)

2 ***Complete each of the following :***

(15) $\mathbb{N} - \{0\} =$ ....

(16) The radius length of the circle = $\frac{\cdots\cdots}{2\pi}$

(17) 32 + (59 + ...) = (32 + 68) + ...

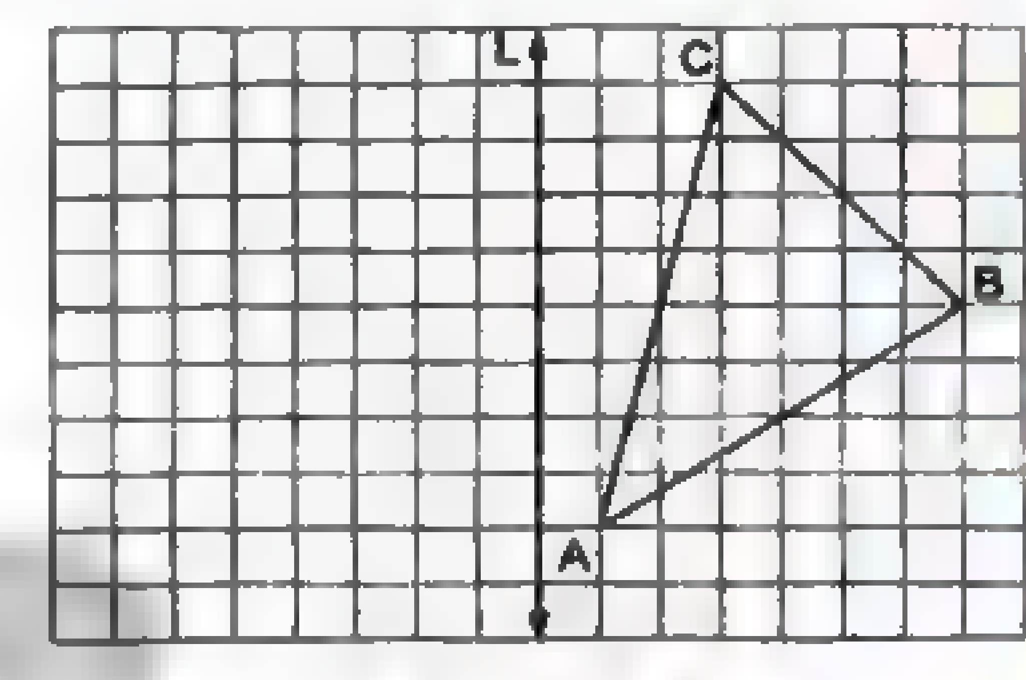
(18) A rhombus its area is 50 cm² and the length of one of its diagonals 25 cm., then the length of the other diagonal = ... cm.

(19) If b = 3 , then 2 b – 5 = ...

(20) If 654 = (x × 100) + 54 , then x = ...

3 ***Answer the following :***

(21) Draw the image of Δ ABC by reflection in the straight line L



(22) If the number x exceeds twice the number y by 9 , write the mathematical relation between x and y

....

(23) A parallelogram of area 36 cm^2 and the length of its base is 4 cm. Find the corresponding height of its bare.

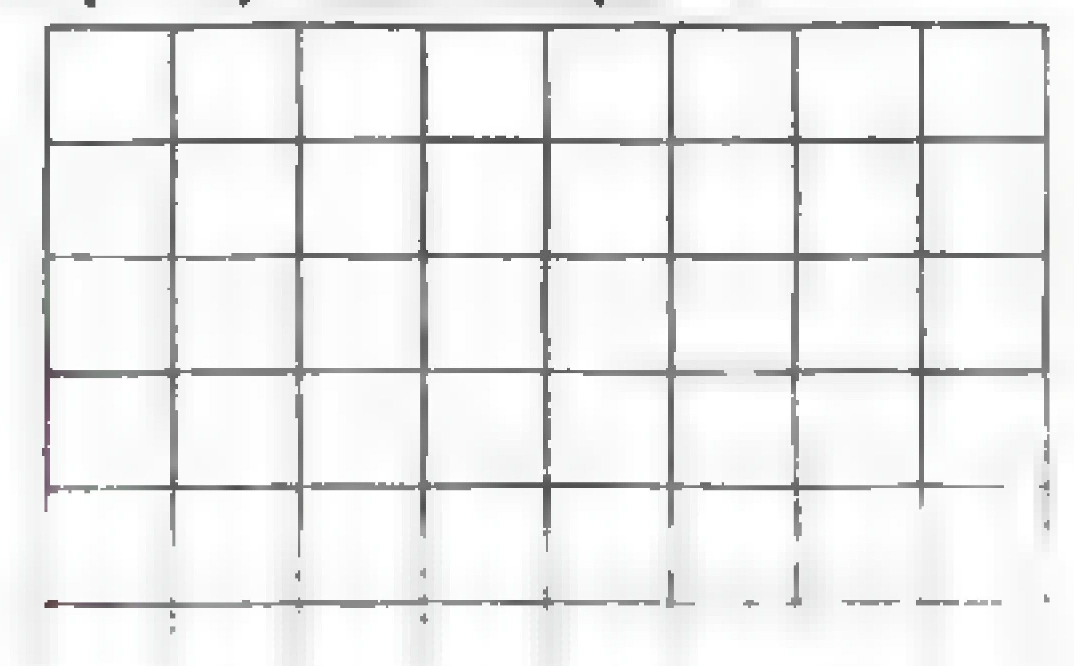
....

(24) Solve the equations in ℕ :

[a] $x - 3 = 21$ [c] 3 y = 27

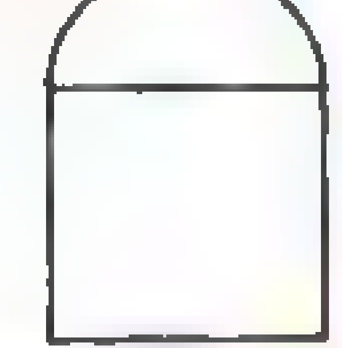
....

(25) On a coordinate plane, draw the figure ABCD where A (1 , 1) , B (4 , 1) , C (4 , 3) , D (1 , 3) , then complete :



[a] The length of $\overline{AB}$ = ... units.

[b] The name of the figure ABCD is ....



(26) In the opposite figure :
There is a window which has the form of a square, whose side length is 70 cm. , and above it, there is a semicircle.
[a] Calculate the perimeter of the window.
[b] If the area of the semicircle is 3850 cm^2 , find the area of the window.

(27) Use the properties of addition to find the result of the following :

$$82 + 75 + 18$$

(28) Write in the list method the set : $X = \{x : x \in \mathbb{N} , 3 \leq x \leq 8\}$
, then represent its elements on the number line.

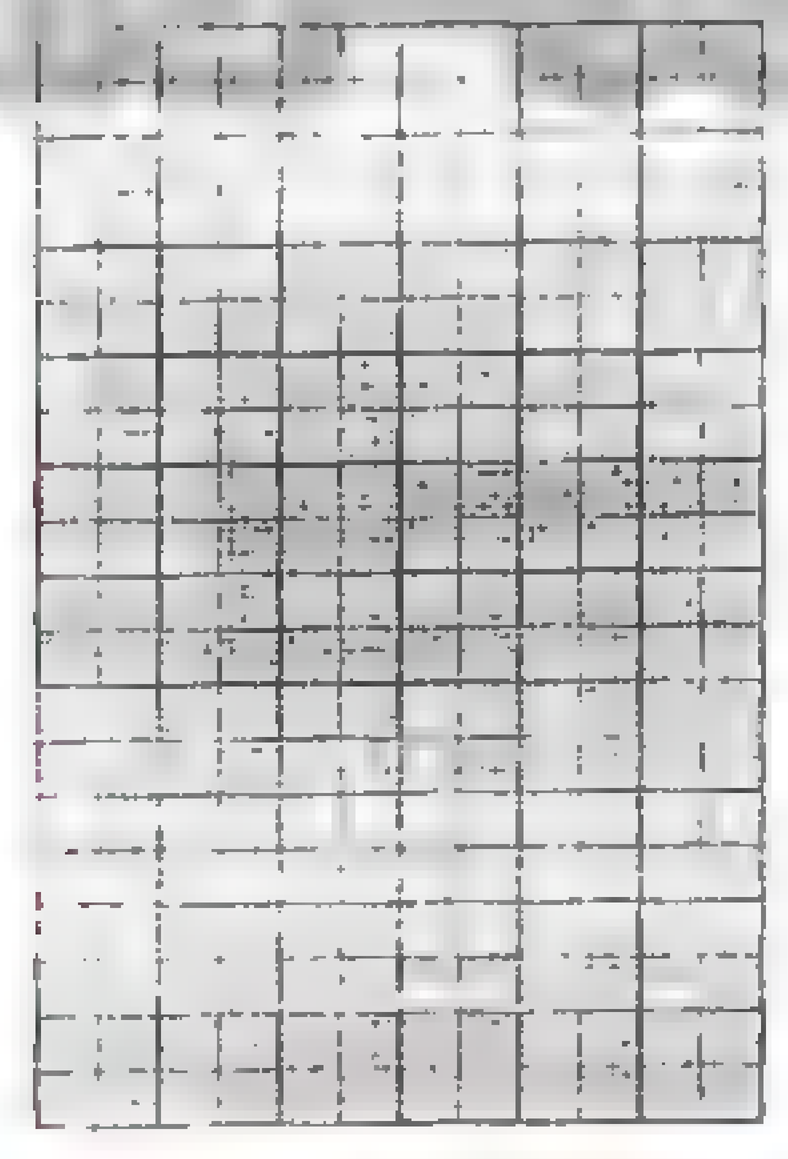
(29) Use the distribution property to find the result of :

$$163 \times 45 - 63 \times 45$$

(30) The following table shows the marks of 50 pupils in math test in one month :

Sets	10 –	20 –	30 –	40 –	Sum
Frequency	10	12	18	10	50

Represent these data by frequency polygon.





Answer the following questions :

1 Choose the correct answer :

(1) The diameter of circle = ... (r or 2r or 3r or 4r)

(2) If $x + 8 = 18$, then $x - 1 =$ .... (11 or 10 or 9 or 8)

(3) If the diagonals lengths of a rhombus are 10 cm. and 12 cm. , then its area = ... cm². (120 or 60 or 24 or 32)

(4) $\{3 , \frac{15}{4}\}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(5) If we subtract 5 from a , we get ....

(5 a or 5 – a or a – 5 or a + 5)

(6) If A (2 , 4) , B (2 , 6) , then the midpoint of $\overline{AB}$ is ....

((10 , 4) or (2 , 5) or (2 , 10) or (0 , 9))

(7) The square has .... axes of symmetry. (0 or 2 or 3 or 4)

(8) The area of a triangle whose base length 5 cm. and the corresponding height 6 cm. is .... cm². (3 or 11 or 15 or 60)

(9) If the sum of two numbers x and y is 25, then y = ...

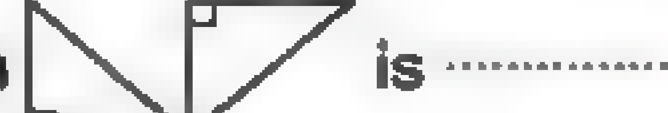
($x - 25$ or $25 - x$ or $x + 25$ or $\frac{x}{25}$)

(10) If O is the set of odd numbers, then O .... $\mathbb{N}$

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(11) A square whose diagonal length is 12 cm. , its area = ... cm².

(144 or 84 or 72 or 60)

(12) The geometric transformation  is ....

(translation or rotation or reflection)

(13) If the circumference of a circle is 314 cm. , then its radius length = ... cm. where $\pi = 3.14$ (100 or 75 or 50 or 25)

(14) If $7 \times 95 = x \times (75 + 20)$, then $x =$ ....

(5 or 95 or 7 or 9)

2 ***Complete each of the following :***

(15) If the age of a man now is x years, then his age after 5 years = ...

(16) If the long base of parallelogram is 8 cm. , short base 5 cm. and its short height is 4 cm. , then its area = ... cm^2

(17) 1 , 2 , 3 , 5 , 8 , ... , ... (in the same pattern)

(18) The property used in : $a \times (b \times c) = (a \times b) \times c$ is ....

(19) The additive neutral element in $\mathbb{N}$ is ....

(20) The set $\{a : a \in \mathbb{N} , a < 4\}$ in the listing method = ...

3 ***Answer the following :***

(21) Use the commutative and the associative properties to simplify finding the result of :

[a] $98 + 175 + 102$ [b] $5 \times 312 \times 20$

....

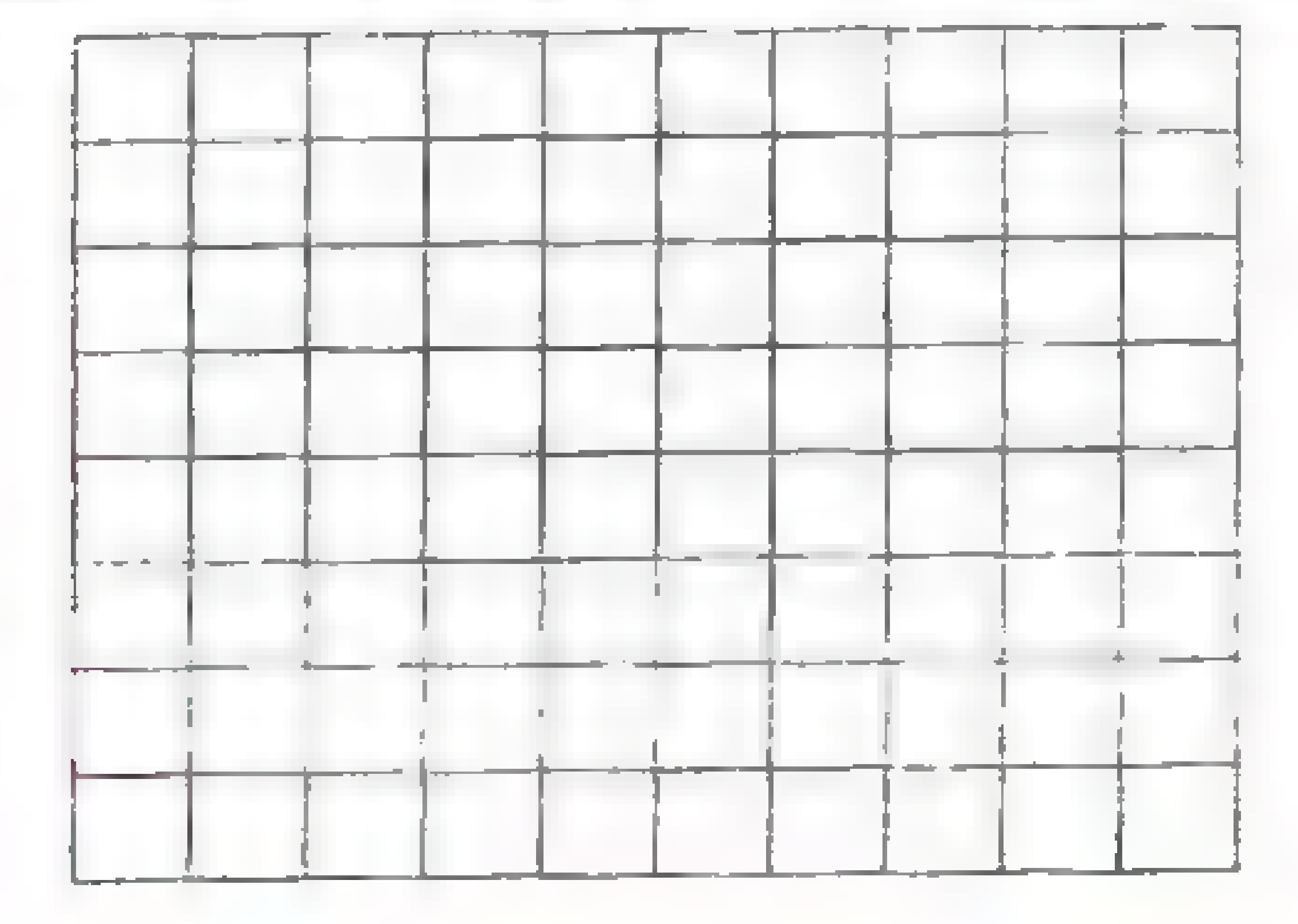
....

(22) In the orthogonal cartesian coordinates , locate the points A (8 , 2) , B (3 , 2) , C (3 , 6) , D (8 , 6) , then complete :

[a] The length of $\overline{AB}$ = ... units, the length of $\overline{BC}$ = ... units.

[b] The figure ABCD is ....

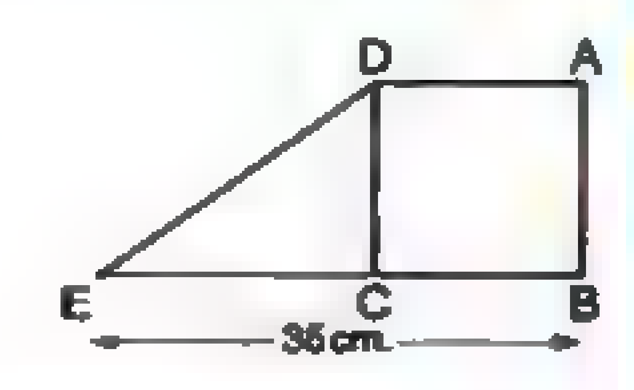
[c] The perimeter of the figure ABCD = ... units.



(23) Solve in ℕ the equations : **[a]** $3x + 8 = 29$ **[b]** $\frac{1}{3}x + 8 = 10$

....

(24) In the opposite figure :



ABCD is a square , its perimeter is 60 cm. , E ∈ $\overline{BC}$ and BE = 35 cm.
Find the area of the figure ABED

....

....

(25) Shady saved 14 pounds , he bought 3 notebocks of x pounds for each. The remainder with him was 8 pounds , express these situation by an equation.

....

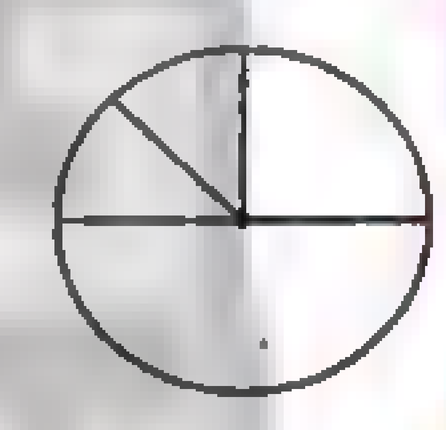
(26) Use the distribution property in ℕ to find :

[a] 111 × 98 **[b]** 315 × 101

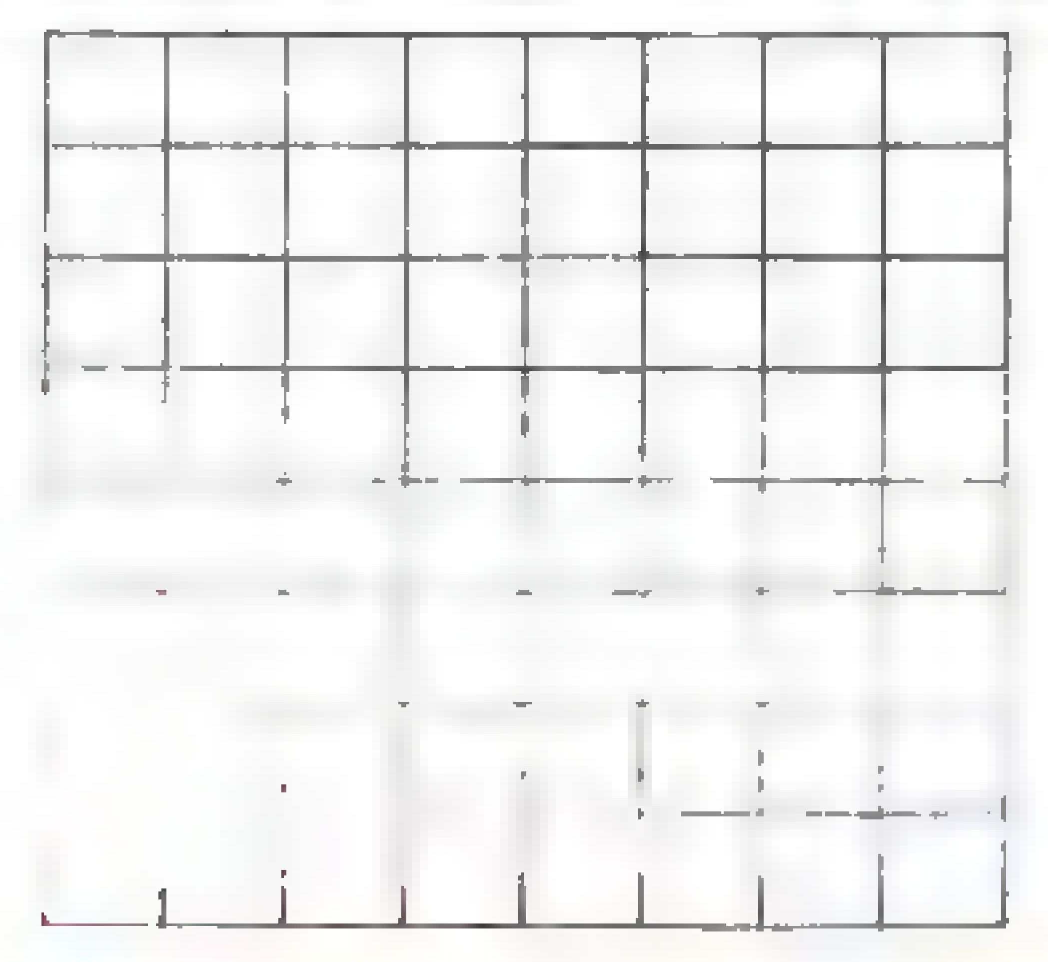
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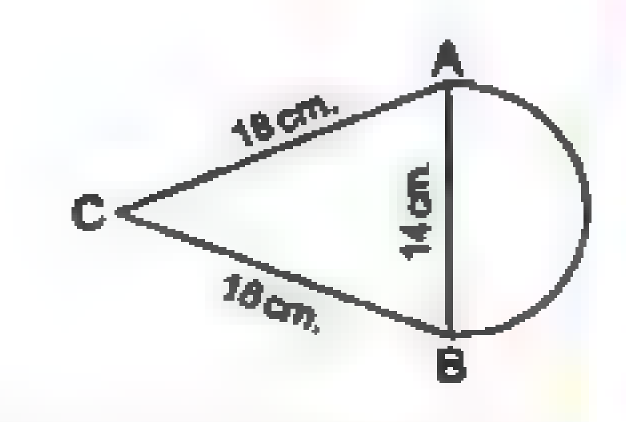
(27) An employes spends his monthy salary as follows : 1000 pounds for food , 500 pounds for clothes , 250 pounds for the rent of the flat and 250 pounds for other spending.
Represent there data on the shown circular sectors.



(28) On the coordinate plane , draw Δ ABC where A (3 , 5) , B (6 , 5) , C (3 , 2) , then draw the image of Δ ABC by reflection across $\overleftrightarrow{AC}$



(29) Calculate the perimeter of the opposite figure where $\overline{AB}$ is the diameter of the circle and AB = 14 cm. (Consider $\pi = \frac{22}{7}$)

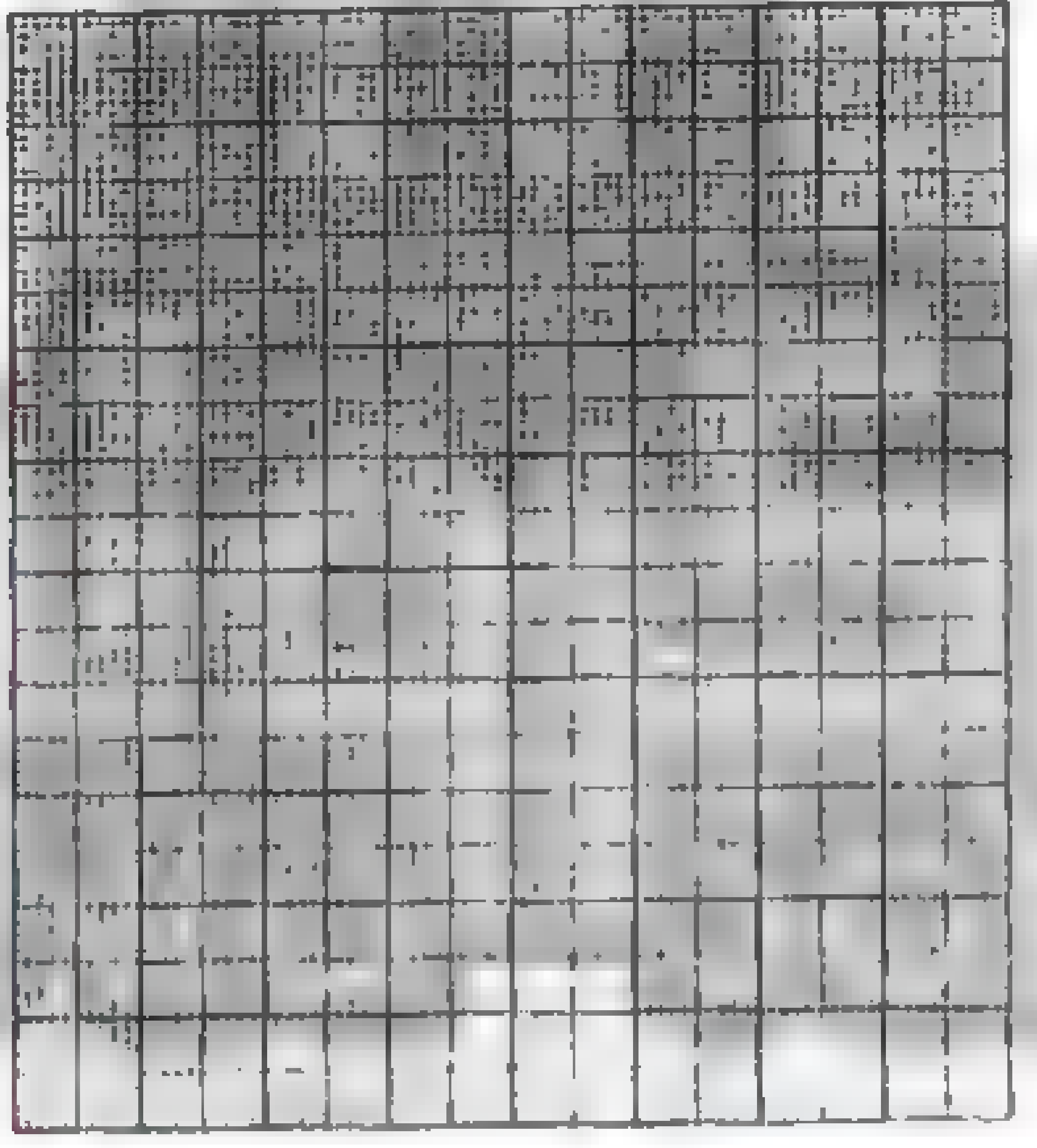


....

(30) The following table shows the daily wages of workers in a company :

Sets	20 –	30 –	40 –	50 –	60 –	Total
Frequency	8	10	16	12	4	50

Draw the histogram and frequency polygon which represent these data.





Answer the following questions :



1 ***Choose the correct answer :***

(1) If the area of a rhombus equals 24 cm^2 and the length of one of its diagonals is 8 cm. , then the length of the other diagonal = ... cm.

(3 *or* 6 *or* 8 *or* 12)

(2) The next term in the pattern : 5 , 25 , 45 , ... is ....

(15 *or* 35 *or* 50 *or* 65)

(3) The number of axes of symmetry of scalene triangle is ....

(0 or 1 or 2 or 3)

(4) The multiplicative identity element in ℕ is ....

(0 or 1 or 2 or 3)

(5) If $X = \{x : x \in ℕ , 0 < x < 1\}$, then X = ...

($\varnothing$ or $\{0 , 1\}$ or $\{0\}$ or $\{1\}$)

(6) If $2a + 7 = 15$, $a \in ℕ$, then a = ... (22 or 11 or 8 or 4)

(7) If x is an odd number , then $x + 2$ is .... number.

(odd or even or prime)

(8) $(4 \times$ ....$) \times 78 = 7800$ (5 or 25 or 50 or 125)

(9) c .... a (number line with points a and c) where a , c are two natural numbers.

(> or < or = or ≤)

(10) Adding 8 to double x , the symbolic expression is ....

($2x + 8$ or $8 - 2x$ or $x + 8$ or $8 + 3x$)

(11) The circumference of a circle whose diameter is 14 cm. equals .... cm. $\left(\pi = \frac{22}{7}\right)$ (100 or 88 or 44 or 22)

(12) The least prime number × any prime number = ... number.

(odd or even or prime or otherwise)

(13) If the ordered pair (3 , 4) = (3 , y) , then y = ...

(2 or 3 or 4 or 5)

(14) $\frac{5}{7}$ .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 ***Complete each of the following :***

(15) 91 × (73 + 27) = 91 × .... = ...

(16) Area of square = $\frac{1}{2}$ × .... × ....

(17) Circumference of the circle ÷ diameter length = ...

(18) The perimeter of an equilateral triangle whose side length is L cm. = ... cm.

(19) The length of the base of the triangle is 8 cm. and its height is 5 cm. , then its area = ... cm^2

(20) The square whose diagonal length is 8 cm. , its area = ... cm^2

3 ***Answer the following :***

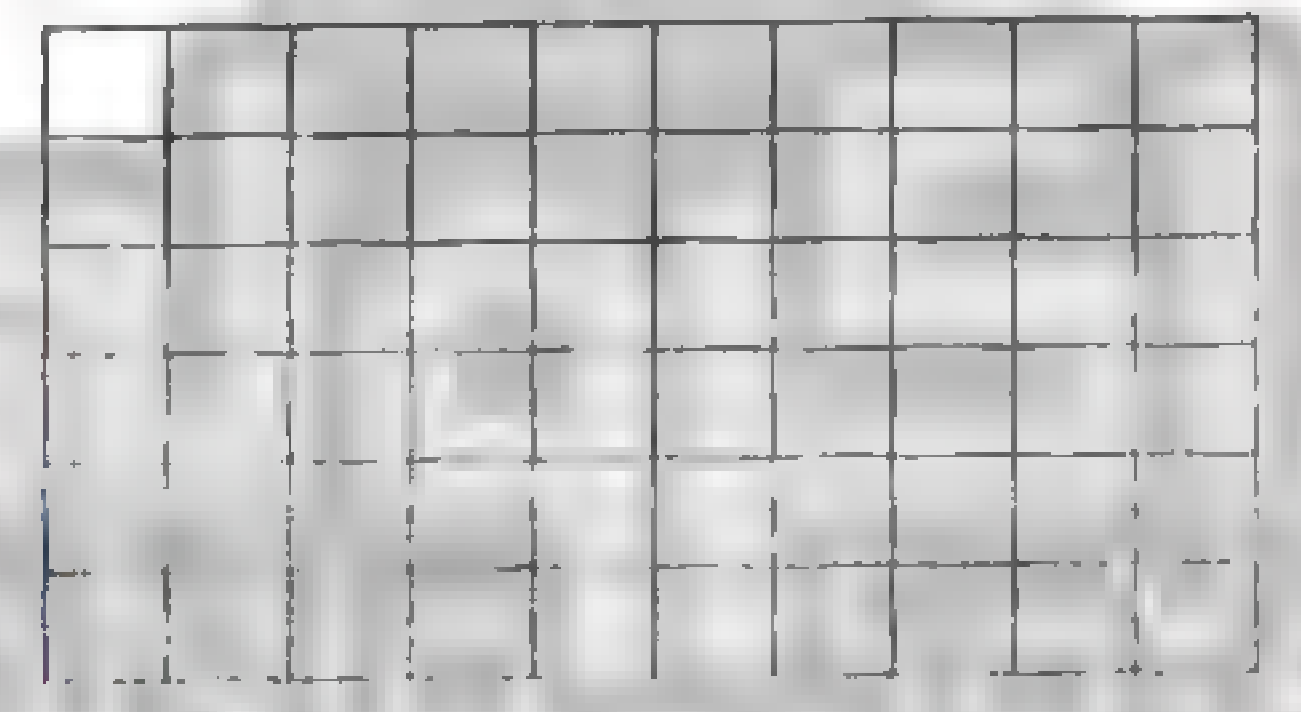
(21) Which is greater in area ? a rhombus in which the lengths of its diagonals are 8 cm. and 6 cm. or the parallelogram in which the length of its base is 10 cm. and the corresponding height is 5 cm. , then calculate the difference between them.

(22) Solve the following equations in $\mathbb{N}$:

[a] $x + 3 = 12$ [b] $2x - 7 = 5$



(23) On the coordinate plane draw $\triangle ABC$ where A (2 , 1) , B (5 , 1) , C (5 , 5) , then draw the image of $\triangle ABC$ by reflection in $\overleftrightarrow{BC}$



(24) If $X = \{x : x \in \mathbb{N} , 1 < x \leq 6\}$, $Y = \{5 , 6 , 7\}$, find :

[a] $X \cap Y$ [b] $X \cup Y$ [c] $X - Y$

(25) Calculate using commutative , associative and distributive properties :

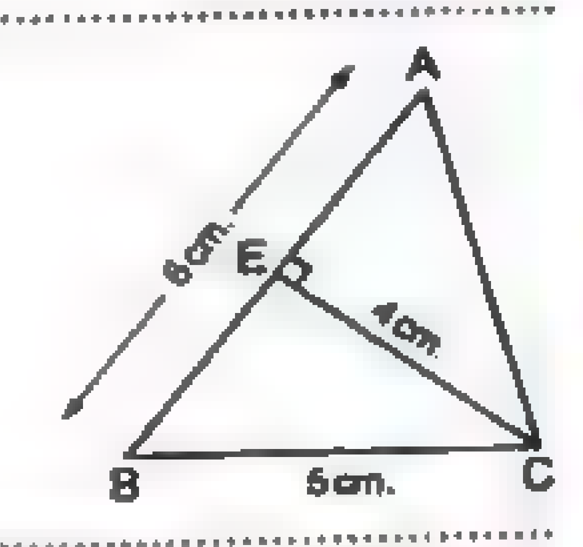
[a] 25×304 [b] $642 + 171 + 358 + 29$

(26) **In the opposite figure :**

ABC is a triangle , $\overline{CE} \perp \overline{AB}$

, if AB = 6 cm. , BC = 5 cm. and CE = 4 cm.

Find the area of $\triangle ABC$



(27) If the diameter length of a bicycle's wheel is 66 cm. , what is the covered distance if the wheel turns 1000 rounds ? (Where $\pi = 3.14$)

....

(28) Calculate the perimeter of the following figure $\left(\text{where } \pi = \frac{22}{7}\right)$



....

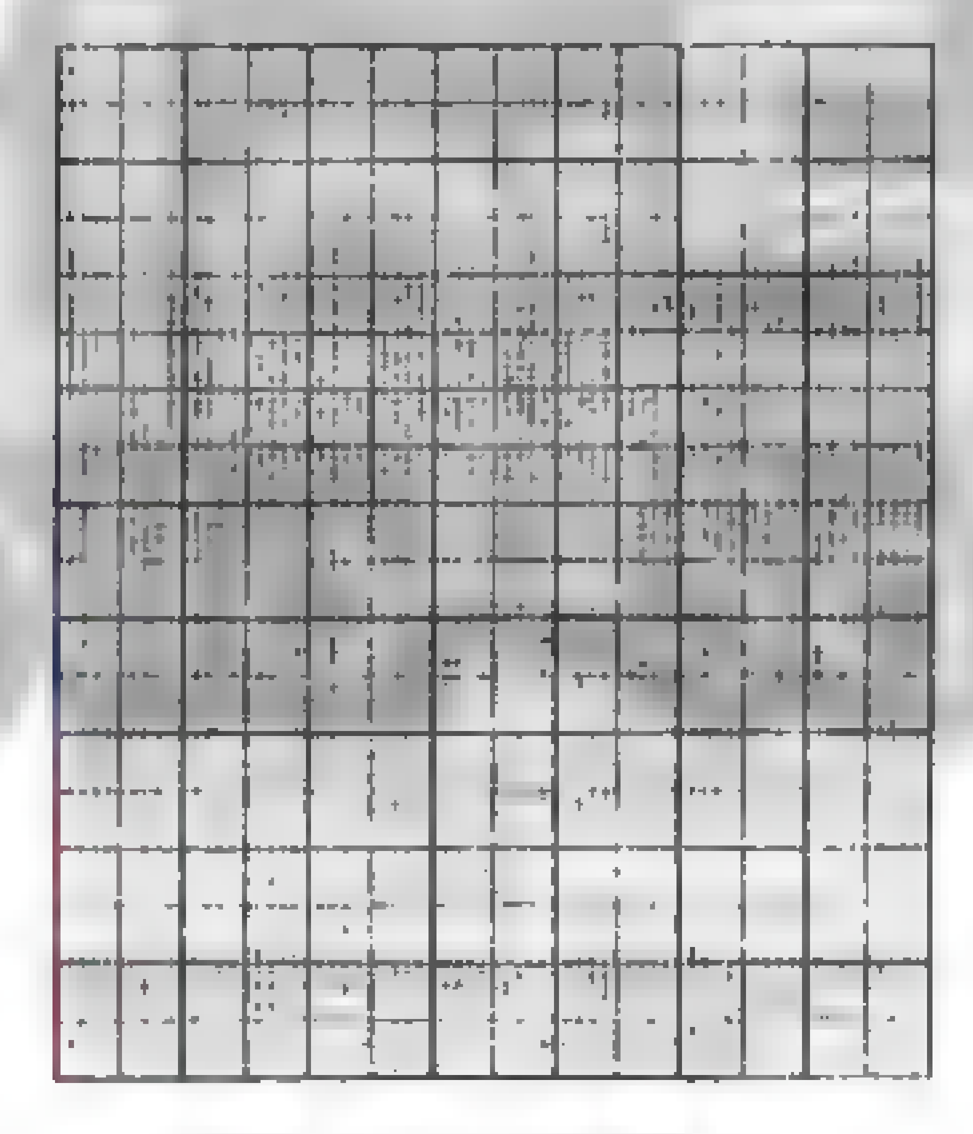
(29) Find the number which if added to 3 , the sum will be 9

....

(30) The following table shows the frequency distribution of the number of work hours of 50 workers :

Sets	2 –	4 –	6 –	8 –	10 –	Total
Frequency	8	9	15	16	2	50

Graph these data using the frequency polygon :





Model 14

Answer the following questions :

1 ***Choose the correct answer :***

(1) The set of even numbers (E) ∩ the set of prime numbers (P) = ...

(P or {0} or ℕ or {2})

(2) The difference between two numbers is 5 , the smaller one is y , then the greater number is ....
(5y or 5 − y or y − 5 or y + 5)

(3) The number of axes of symmetry of the rhombus = ...
(1 or 2 or 3 or 4)

(4) If y + 5 = 20 , then y = ... (4 or 15 or 25 or 100)

(5) If we multiply the number a by 9 , then we subtract 4 from the result , we get .... (9 a + 4 or 4 a + 9 or 9 a − 4 or a − 36)

(6) $\{2, \frac{1}{2}\}$ .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(7) The circumference of a circle whose diameter is 21 cm. equals .... cm. $(\pi = \frac{22}{7})$ (22 or 44 or 66 or 88)

(8) The shaded triangle is an image of other triangle by ....
(reflection or translation or rotation)

(9) A rhombus in which the lengths of its diagonals are 10 cm. and 12 cm. , its area = ... cm² (120 or 60 or 24 or 32)

(10) The square whose perimeter is 16 cm. , its area = ... cm²
(4 or 7 or 8 or 16)

(11) 5 × (2 + 10) = ... (50 or 60 or 75 or 100)

(12) 1 , 4 , 7 , 10 , ... (in the same pattern)
(15 or 20 or 13 or 17)

(13) The triangle whose base length is 5 cm. and the corresponding height of it is 8 cm. , its area = ... cm²
(40 or 26 or 20 or 13)

(14) The ordered pair (3 , 4) = (x , 4) , then x = ...
(2 or 3 or 4 or 7)

2 ***Complete each of the following :***

(15) 15 × 5 + 15 × 7 = 15 (.............. + ...)

(16) If 7 + 0 = 0 + 7 = 7 , then the used property is called ....

(17) The symmetry axis divides the figure into two .... halves.

(18) The multiplicative neutral element in ℕ is ....

(19) The square whose area is 18 cm^2, then its diagonal length is .... cm.

(20) If X = {x : $x \in \mathbb{N}$, $x < 3$} , then X = ...

3 *Answer the following :*

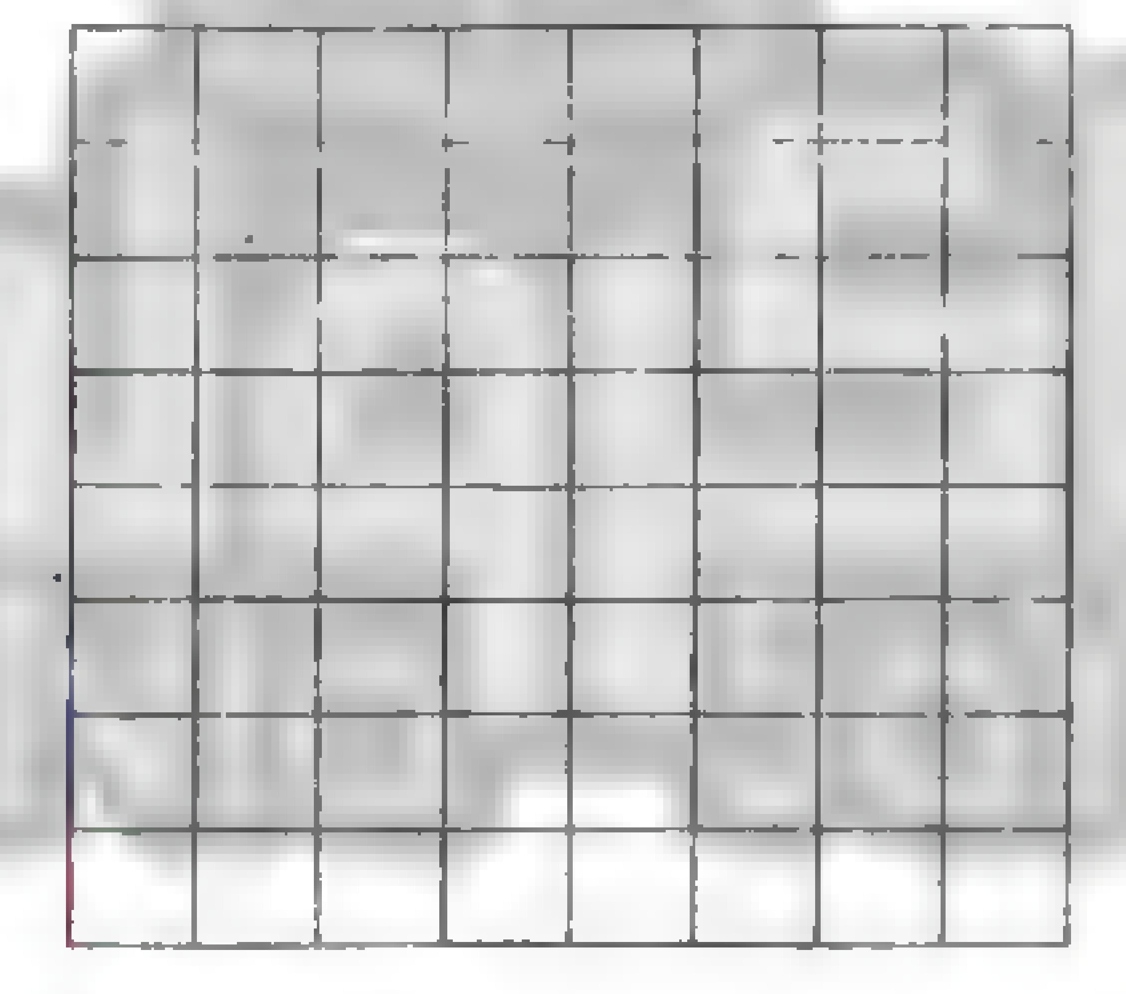
(21) Use the properties to find :

[a] 73 × 1001 [b] 872 + 199 + 128 + 801

....

....

(22) In the coordinate plane draw the triangle ABC where A (2 , 4) , B (4 , 2) , C (4 , 7) , then draw the image of the triangle ABC by reflection across $\overleftrightarrow{BC}$



(23) Solve the equations in $\mathbb{N}$:

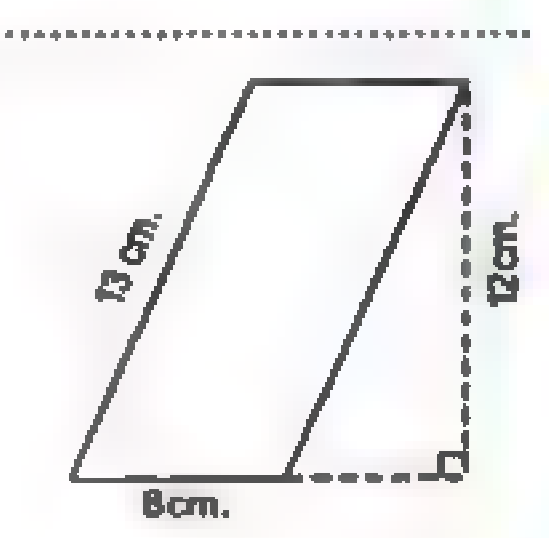
[a] 2 x + 9 = 21 [b] 5 – y = 3

....

....

(24) Find the area of the opposite parallelogram :

....



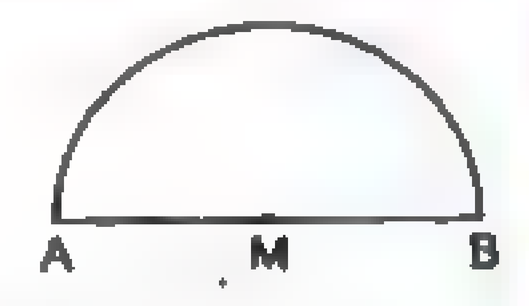
(25) Use the properties of operations in ℕ to find :

[a] $25 \times 37 \times 4$ [b] $5 \times (20 + 15)$

....

....

(26) Calculate the perimeter of the opposite figure where AM = 7 cm. $\left(\pi = \frac{22}{7}\right)$



....

(27) If the number x exceeds twice the number y by 7 , write down the mathematical relation which relates x by y

....

(28) By using the distribution property find : $37 \times 46 + 37 \times 54$

....

(29) If the age of a man now is $2x$ years where $x \in ℕ$ Find :

[a] The age of the man after 6 years ....

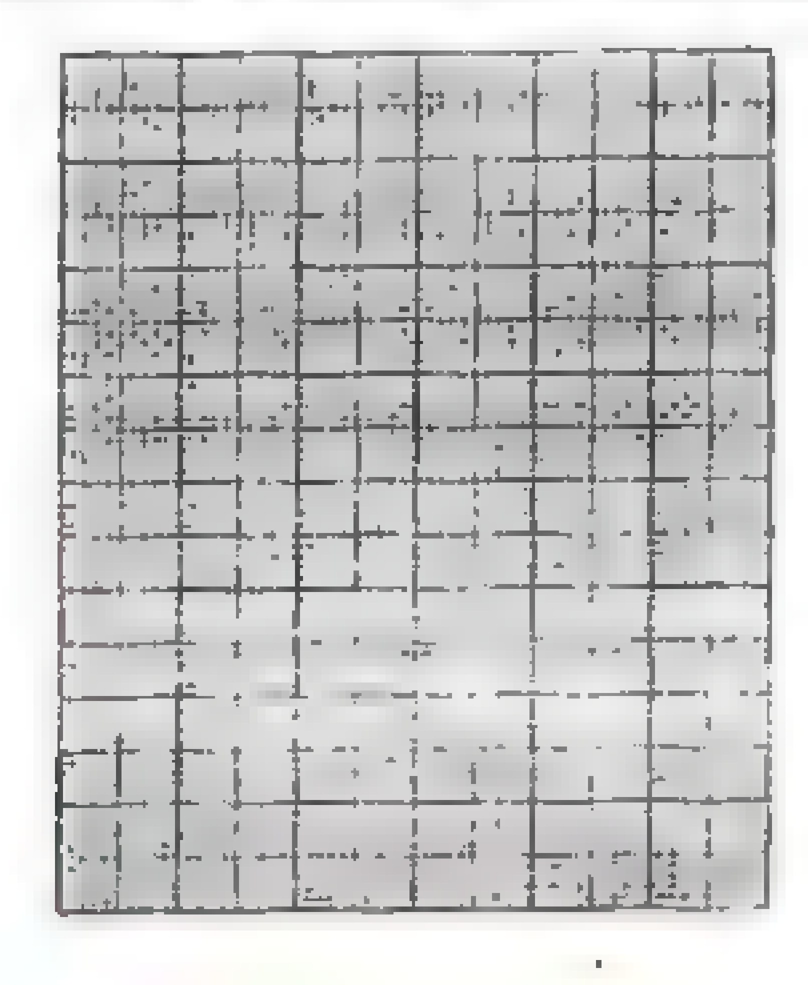
[b] The age of the man since 3 years ....

(30) The following table the recorded temperature in 40 cities on day :

Temperature	20 –	22 –	24 –	26 –	28 –
No. of cities	7	10	12	6	5

[a] Draw each of histogram and frequency polygon.

[b] What is the number of cities their temperatures are less than 24 ?



Model 15

Answer the following questions :

1 ***Choose the correct answer :***

(1) If x is an even number , then $x + 2$ is .... number.
(even *or* odd *or* prime *or* otherwise)

(2) The radius length of a circle whose circumference is 88 cm. = ... cm. $\left(\pi = \frac{22}{7}\right)$ (28 *or* 21 *or* 14 *or* 7)

(3) The isosceles trapezium has .... line(s) of summetry.
(4 *or* 3 *or* 2 *or* 1)

(4) If the area of a square is 50 cm^2 , then the length of its diagonal is .... cm. (7 *or* 8 *or* 9 *or* 10)

(5) If a = 3 , b = 5 , then 4 a – 2 b = ... (2 *or* 5 *or* 14 *or* 22)

(6) If $x + 3 = 8$, $x \in \mathbb{N}$, then $2x$ = ...
(11 *or* 24 *or* 5 *or* 10)

(7) 37 × 100 – 37 × .... = 37 × 15 (115 *or* 75 *or* 85 *or* 63)

(8) The number of altitudes of the triangle is ....
(1 *or* 2 *or* 3 *or* 4)

(9) (8 – 8) .... $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(10) 7 is subtracted from double of x = ...
($7 - 2x$ *or* $2x - 7$ *or* $2 - 7x$ *or* $7 + 2x$)

(11) The base length of a triangle is 8 cm. and its height is 5 cm. , then its surface area = ...
(20 cm. *or* 20 cm^2 *or* 40 cm. *or* 40 cm^2)

(12) The smallest counting number is .... (0 *or* 1 *or* 2 *or* 3)

(13) If the sum of two numbers x and y is 20 , then y = ...
($20 + x$ *or* $20 - x$ *or* $x - 20$ *or* $\frac{x}{20}$)

(14) (4 × ....) × 78 = 7800 (5 *or* 10 *or* 25 *or* 50)

2 *Complete each of the following :*

(15) The area of the rhombus = $\frac{1}{2}$ × the product of ....

(16) If A (2 , 3) , B (2 , 7) , then the midpoint of $\overline{AB}$ is ....

(17) If the number x is 9 more than twice y , then x = ...

(18) The opposite transformation is .... ⇧ ⇩

(19) If A , B , C are natural numbers , then (A × B) × C = A × (B × C) is called .... property.

(20) If the perimeter of a rectangle is 20 cm. , its length is x , then its width is ....

3 *Answer the following :*

(21) Write in the list method the set : X = $\{x : x \in \mathbb{N} , 1 < x \leq 7\}$, then represent its elements on the number line.

....

(22) Use the properties of addition to find the result of the following :

82 + 75 + 18 + 25

....

(23) Which is greater in area ?

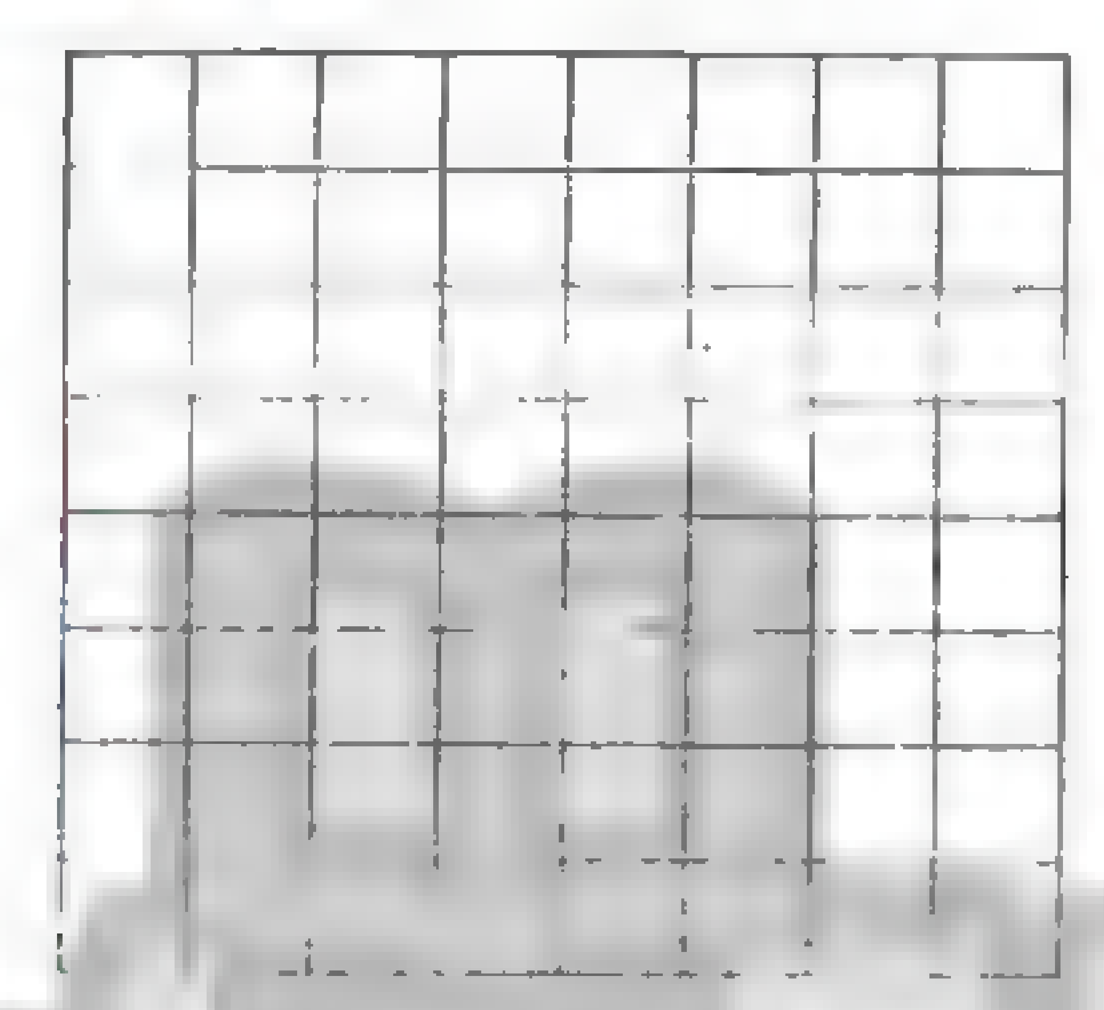
A rhombus the lengths of its diagonals are 8 cm. and 6 cm. or a parallelogram in which the lengths of its base is 10 cm. and the corresponding height is 5 cm.

....

(24) In the cartesian coordinate plane determine the following points A (6 , 6) , B (6 , 2) , C (1 , 2) and D (1 , 6) , then complete :

[a] The name of the figure ABCD is ....

[b] The length of $\overline{CD}$ is ....



(25) If $X = \{x : x \in \mathbb{N} , 1 \leq x \leq 8\}$, $Y = \{2 , 4 , 9\}$, find :

[a] $X \cup Y$ [b] $X \cap Y$ [c] $X - Y$

....

(26) Solve the equations in $\mathbb{N}$:

[a] $3x + 7 = 19$ [b] $2y + 5 = 10$

....

....

(27) If the diameter length of the wheel of a bicycle is 50 cm.
How long is the distance covered by the bicycle in meter if it turns 1200 turns ? ($\pi = 3.14$)

....

....

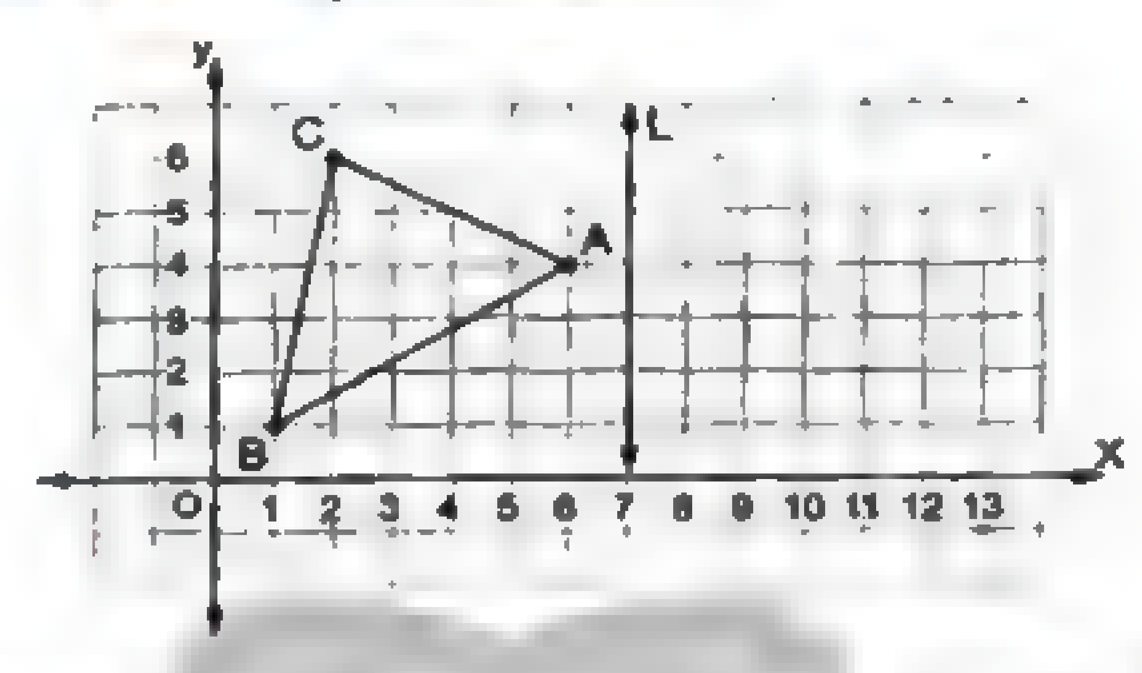
(28) Use the operations properties in $\mathbb{N}$ to find :

[a] $8 \times 12 \times 125$ [b] $231 \times 71 - 31 \times 71$

....

....

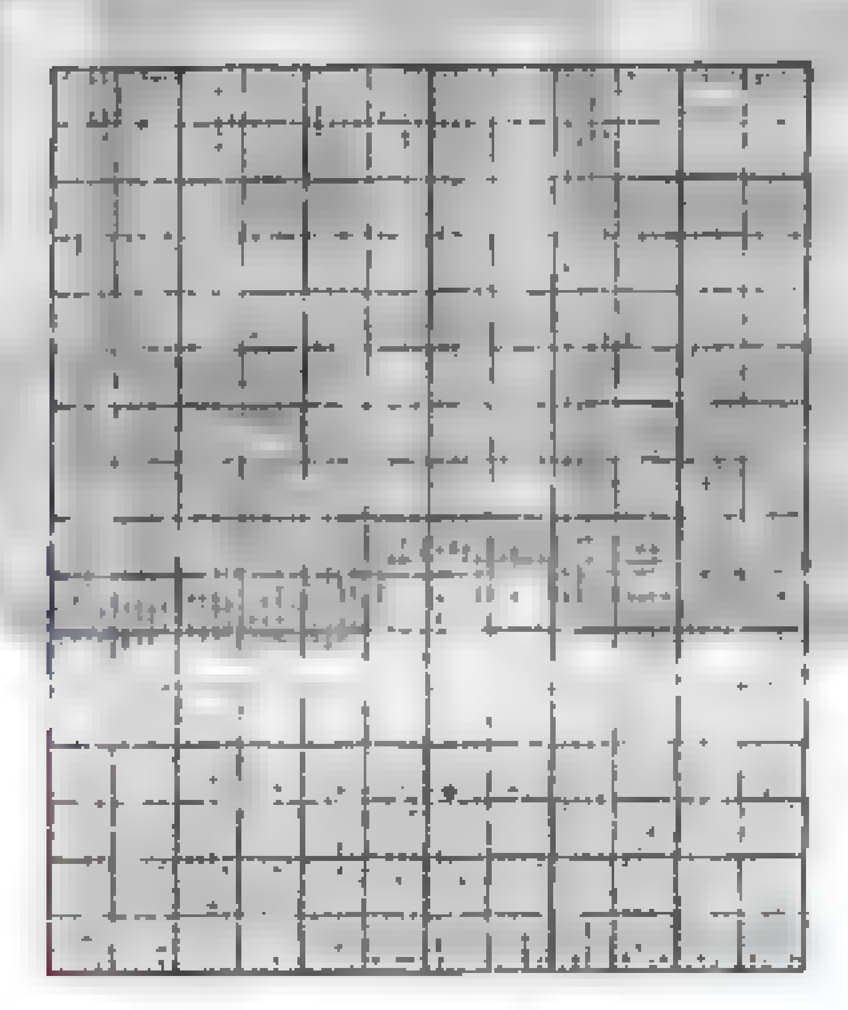
(29) If L is the axis of reflection of the Δ ABC , draw Δ $\grave{A}\grave{B}\grave{C}$ the image of Δ ABC by reflection in L

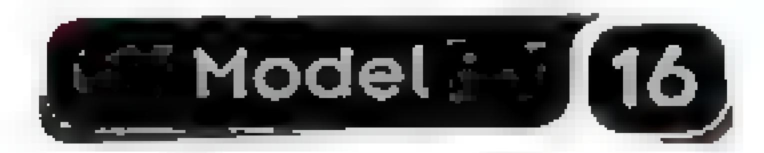


(30) The following table shows the frequency distribution of the number of work hours of 50 workers :

Sets	10 –	20 –	30 –	40 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represent these data.





Answer the following questions :

1 ***Choose the correct answer :***

(1) If $3x = 6$, $x \in \mathbb{N}$, then $5x - 1 =$ .... (4 or 6 or 7 or 9)

(2) If a = 1 , b = 2 , then 5 ab = ... (10 or 11 or 13 or 20)

(3) The isosceles triangle has .... line(s) of symmetry.

(0 or 1 or 2 or 3)

(4) The area of rhombus whose diagonals lengths are 12 cm. and 16 cm. = ... cm^2 (56 or 28 or 96 or 129)

(5) {2, 3} .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(6) The area of a square whose diagonal length is 14 cm. = ... cm^2

(196 or 98 or 56 or 158)

(7) The length of the base of a triangle whose area is 120 cm^2 and its height is 10 cm. is .... cm. (2 or 6 or 12 or 24)

(8) The additive neutral element in ℕ × the multiplicative neutral element in ℕ = ... (3 or 2 or 1 or 0)

(9) If the product of two numbers a and b is 15, then b = ...

(15 a or $\frac{a}{15}$ or $\frac{15}{a}$ or a + 15)

(10) If the radius length of a circle is 20 cm., then its circumference = ... cm. (10 π or 20 π or 40 π or 80 π)

(11) Adding 5 to three times a number y is ....

(5 × 3 y or 5 – 3 y or 3 y – 5 or 3 y + 5)

(12) If b = 3, then 2 b – 1 = ... (6 or 5 or 4 or 3)

(13) {7, 9.2} .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(14) If 7 y = 2 x + 3, then the constant is .... (y or 7 or 2 or 3)

2 ***Complete each of the following :***

(15) If 735 = (x × 100) + 35, then x = ...

(16) The set of natural numbers less than 7 and greater than 2 is ....

(17) 21 + (36 + ...) = (21 + ...) + 84

(18) 99 added to the neutral element of multiplication = ...

(19) 1 × 2, 2 × 4, 3 × 8, ..., ... (in the same pattern)

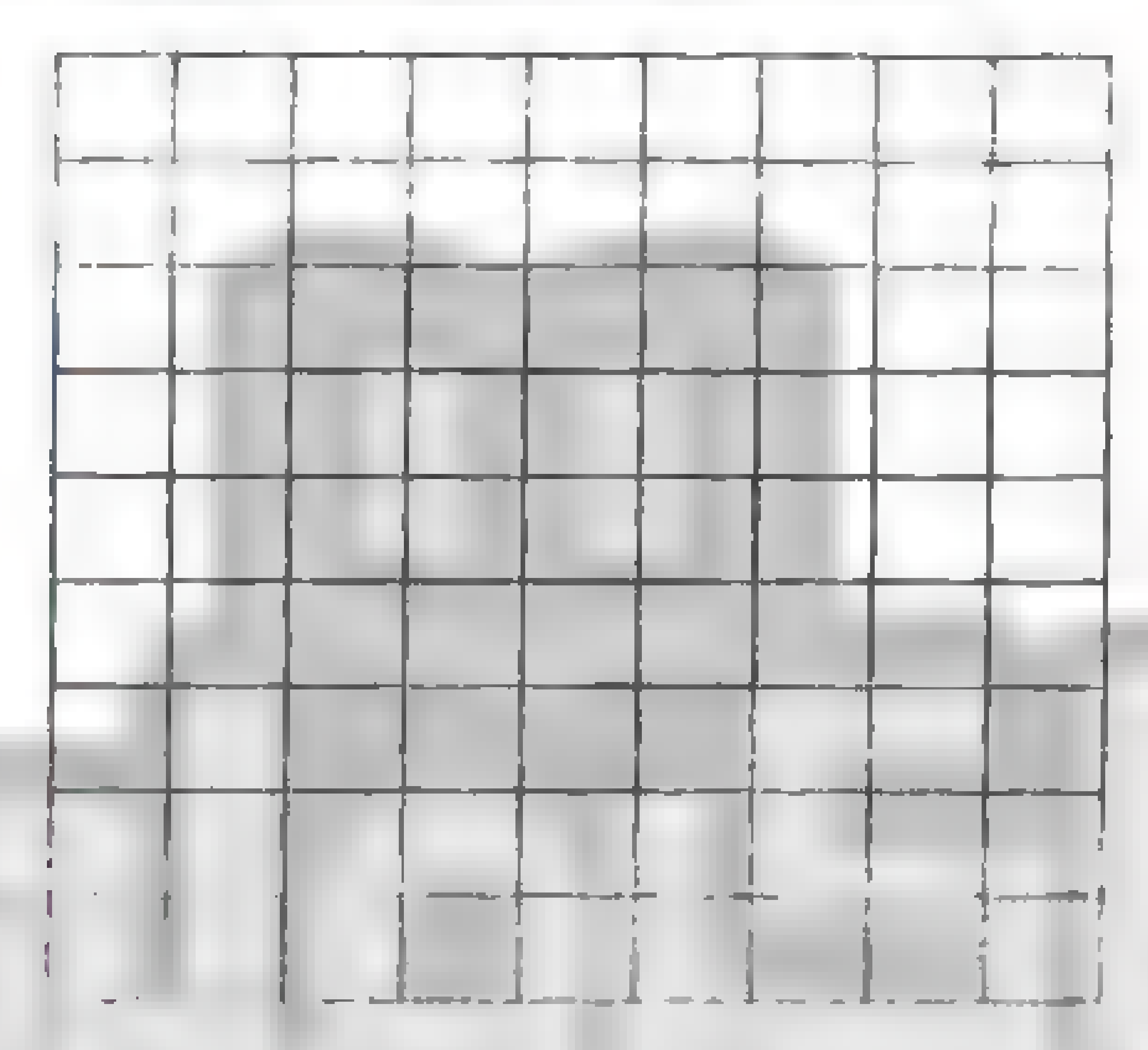
(20) The area of a parallelogram = ...

3 *Answer the following :*

(21) In the two dimensions cartesian coordinates , determine the points A (2 , 5) , B (5 , 2) , C (5 , 8) , then :

[a] Find the length of $\overline{BC}$

[b] Draw its image by reflection across $\overleftrightarrow{BC}$



(22) Solve the following equation : $5x - 7 = 33$, $x \in \mathbb{N}$

....

(23) Use the properties of operation in $\mathbb{N}$ to find the result of :

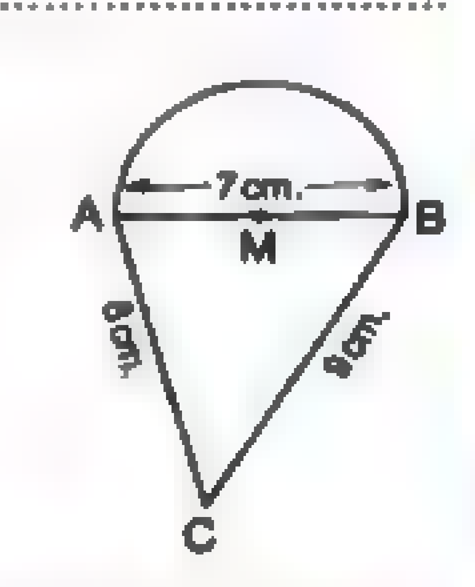
[a] 26×999

[b] $321 + 627 + 179 + 373$

....

....

(24) Calculate the perimeter of the opposite figure where AB = 7 cm. , BC = 9 cm. and AC = 8 cm. $\left(\pi = \frac{22}{7}\right)$



....

(25) Which is smaller in area ?

a square of side length 12 cm. or a rhombus with diagonal 20 cm. and 14 cm.

....

....

(26) Using the properties of commutative , distributive and associative to find the value of : $4 \times 31 \times 25$

....

(27) Ahmed has L.E. x , Samir has L.E. 10 and the sum of what Samir has twice of what Ahmed has is L.E. 24 Write the equation that represents this situation and find the value of x

....

(28) Solve the following equation in $\mathbb{N}$: $\frac{1}{2} x + 8 = 10$

....

(29) If $a = 5$, $b = 3$, $c = 1$, then find :

[a] $a \times b - c$

[b] $\frac{a - c}{b}$

....

(30) Use the histogram and frequency polygon to represent the data and find the value of A :

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	5	7	12	A	7	40

Model 17

Answer the following questions :

1 *Choose the correct answer :*

(1) The opposite geometric transformation is ....

(rotation *or* translation *or* reflection)

(2) The value of : 10 – 2 h when h = 3 equals ....

(5 *or* 4 *or* 7 *or* 16)

(3) A circle of radius length 7 cm. , its circumference = ... cm. $\left(\pi = \frac{22}{7}\right)$

(22 *or* 44 *or* 60 *or* 14)

(4) The square whose diagonal length 10 cm. , then its area = ... cm^2

(100 *or* 50 *or* 200 *or* 25)

(5) Four times of a number y is represented by ....

(y + 4 *or* 4 y *or* y – 4 *or* $\frac{y}{4}$)

(6) 12 × 7 = 7 × .... (12 *or* 7 *or* 84 *or* 5)

(7) 1 , 1 , 2 , 3 , 5 , 8 , ... (in the same pattern)

(9 *or* 11 *or* 13 *or* 40)

(8) (5 – 8) .... ℕ (∈ *or* ∉ *or* ⊂ *or* ⊄)

(9) The number of axes of symmetry of the rhombus = ...

(0 *or* 1 *or* 2 *or* 3)

(10) The sum of two odd numbers is .... number.

(even or odd or prime or otherwise)

(11) 215 + 53 = 53 + 215 is called .... property.

(commutative *or* closure *or* associative)

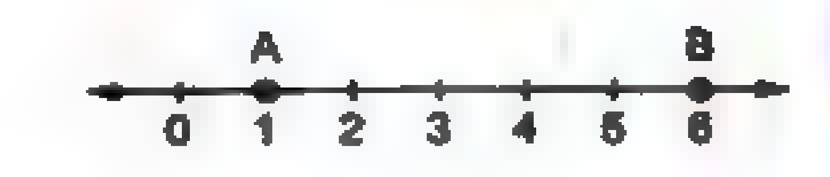
(12) If y + 3 = 7 , then y + 1 = ... (4 *or* 3 *or* 5 *or* 6)

(13) The area of the rhombus whose side length is 8 cm. and its height is 4 cm. equals .... cm^2 (12 *or* 16 *or* 32 *or* 64)

(14) For a ∈ ℕ , b ∈ ℕ , then a × b .... ℕ (∈ *or* ∉ *or* ⊂ *or* ⊄)

2 *Complete each of the following :*

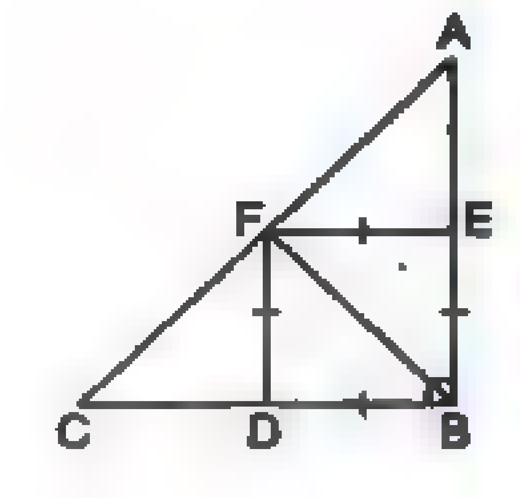
(15) In the opposite figure :



The length of $\overline{AB}$ = ... length units.

(16) If $x \times 4 + x \times 60 = 3 \times 64$, then x = ...

(17) In the opposite figure :



Δ BEF is the image of Δ BDF

by reflection across ....

(18) If $(x , 1) = (4 , y)$, then x = ... , y = ...

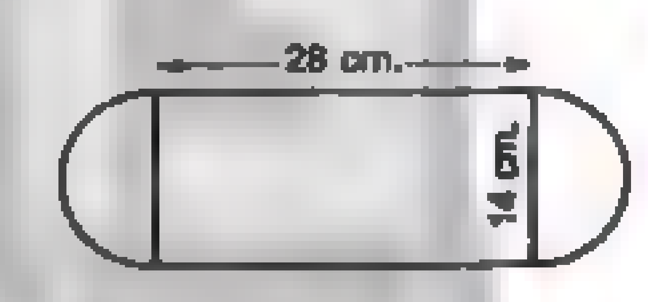
(19) If the difference between two numbers is 5 , the smaller number is y , then the greater number is ....

(20) If $X = \{x : x \in \mathbb{N} , 2 \leq x \leq 5\}$, then X = ...



3 *Answer the following :*

(21) Calculate the perimeter of the opposite figure. $\left(\pi = \frac{22}{7}\right)$



....

....

(22) Use property of commutative and associative in $\mathbb{N}$ to find the result of : 8 × 34 × 125

....

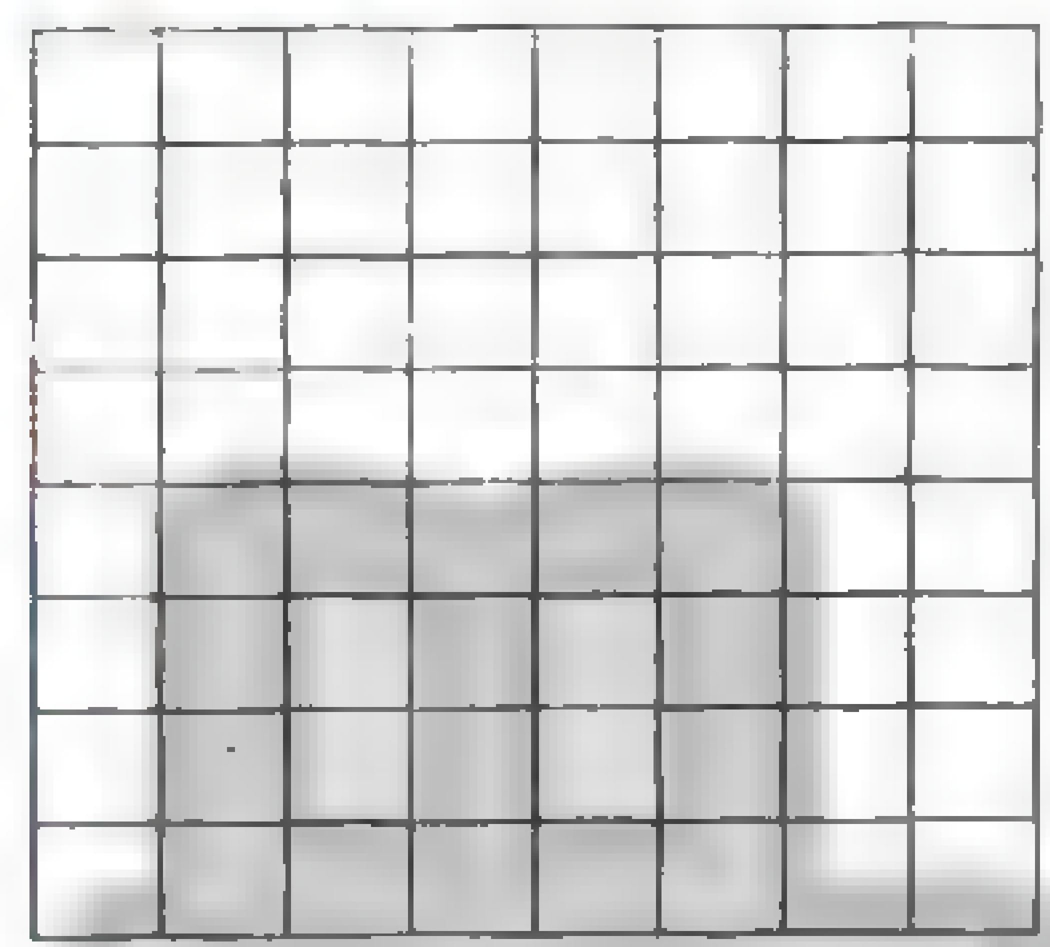
(23) Solve the following equation when $x \in \mathbb{N}$:

$3x - 6 = 12$

....



(24) In the two dimensions coordinates , draw Δ ABC where A (4 , 2) , B (4 , 5) , C (7 , 2) , then find its image by reflection across $\overleftrightarrow{AB}$ and find the length of $\overline{AB}$



(25) Find the area of the triangle whose base length is 12 cm. and height is 8 cm.

....

(26) If x is a prime number included between 1 and 6 , write down the values of x

....

(27) In the opposite figure :
ABCD is a parallelogram in which
BC = 14 cm. , BE = 6 cm.
, M is the midpoint of $\overline{AD}$, complete :

[a] AD = ... cm. [b] AM = ... cm.

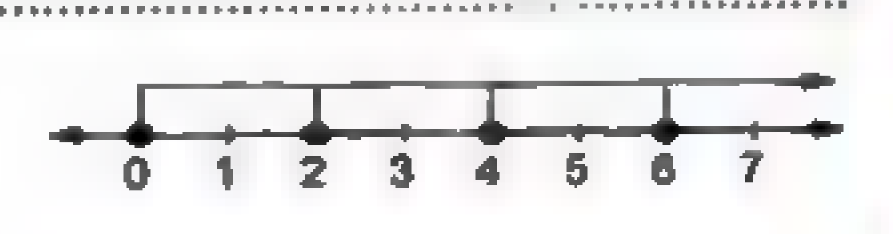
[c] The area of ▱ ABCD = ... cm^2

[d] The area of Δ ABM = ... cm^2

(28) Use the distributive property to find : 299 × 12

....

(29) Write down the representing set on the opposite number line :

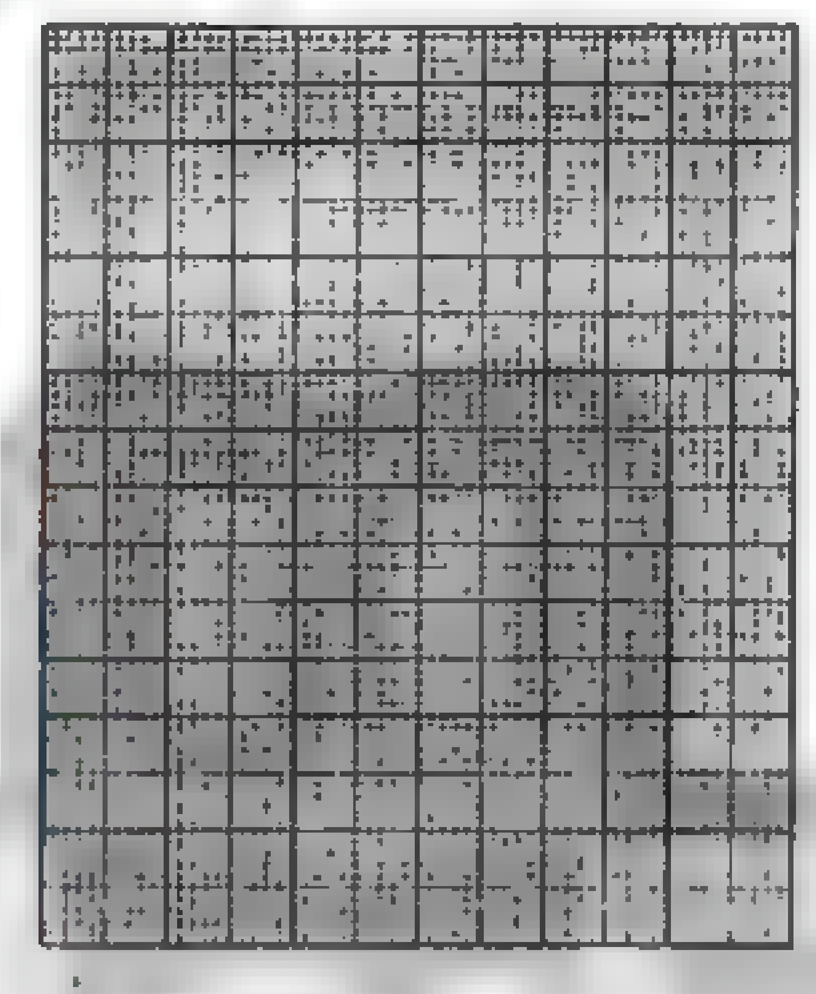


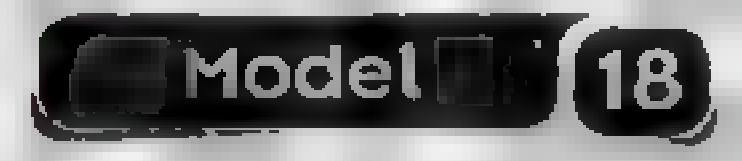
....

(30) The following data represents the marks in Arabic test for students in one classroom :

Sets	10 –	20 –	30 –	40 –	Total
Frequency	8	12	16	14	50

Draw the histogram for his distribution.





Answer the following questions :

1 *Choose the correct answer :*

(1) If $X = \{a : a \in \mathbb{N} , 7 < a < 8\}$, then X = ...

({7} *or* {8} *or* {7 , 8} *or* ∅)

(2) .... = $\frac{1}{2}$ the length of its diagonal × itself. (Area of triangle *or* Area of parallelogram *or* Area of square *or* Area of rhombus)

(3) The circle in which the length of the greatest chord is 21 cm. , its circumference = ... cm. $(\pi = \frac{22}{7})$

(35 *or* 14 *or* 44 *or* 66)

(4) The set of even numbers ∪ the set of odd numbers = ...

(E *or* O *or* ∅ *or* ℕ)

(5) $(x - 15)$ .... $(x - 14)$ where x is a natural number more than 17

(> *or* < *or* = *or* ≥)

(6) The difference between three times a number x and two is ....

($3x + 2$ *or* $3x - 2$ *or* $3 \times 3x$ *or* $\frac{3x}{2}$)

(7) If $\frac{1}{7}x - 3 = 2$, $x \in \mathbb{N}$, then x = ... (5 or 12 or 2 or 35)

(8) The circumference of a circle ÷ r = ...

(π or 2π or $\frac{\pi}{2}$ or $\frac{1}{2}$)

(9) The area of the largest rectangle whose perimeter is 24 cm.

= .... cm^2 (32 or 36 or 72 or 144)

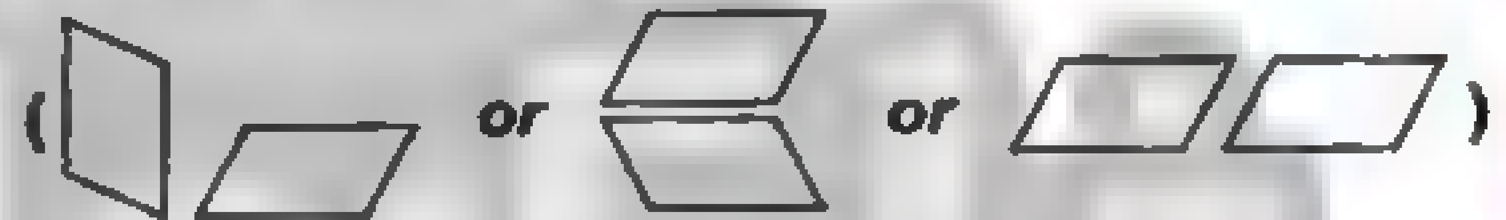
(10) The number of axes of symmetry of the equilateral triangle is ....

(1 or 2 or 3 or 4)

(11) The area of a parallelogram in which the length of the base is 10 cm. and its height is 5 cm. equals .... cm^2

(15 or 25 or 50 or 100)

(12) Which of the following geometric transformation represents the reflection ?



(13) The base length of a triangle whose area is 120 cm^2 and its height is 5 cm. equals .... cm. (12 or 24 or 48 or 96)

(14) $\{\frac{1}{3}, 1, 2\}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 ***Complete each of the following :***

(15) The set of natural numbers less then 7 is ....

(16) 91 × (73 + 27) = 91 × .... = ...

(17) If the side length of a square is 5 cm. , then its area = ... cm^2

(18) If x is an odd number , then $x + 2$ is an .... number.

(19) 2 , 7 , 12 , 17 , ... , ... (in the same pattern)

(20) If 37 + 73 = 73 + 37 , then its is called .... property.

3 ***Answer the following :***

(21) The lengths of the diagonals of a rhombus are 30 cm. and 20 cm. Calculate its area.

....

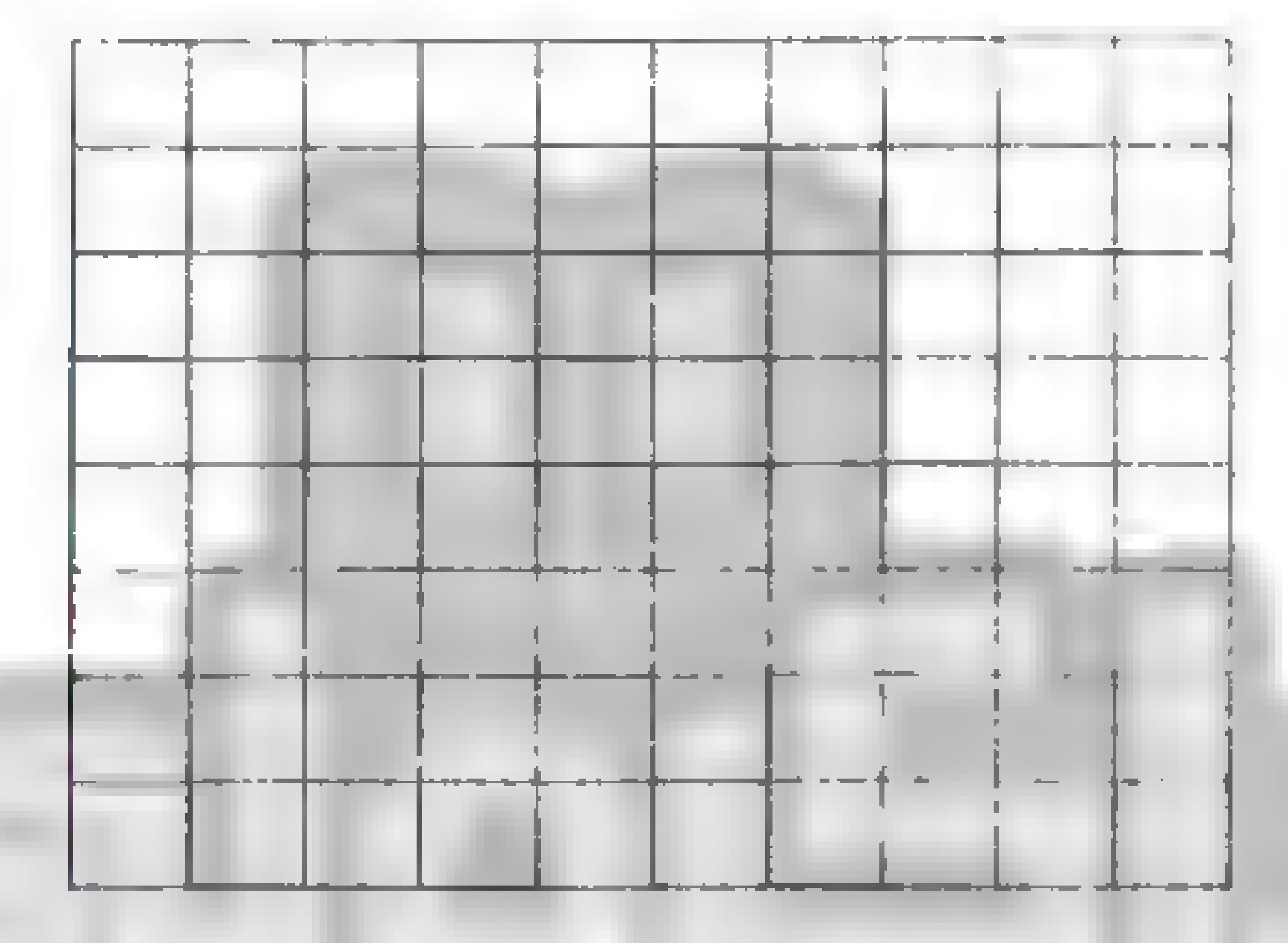
(22) Solve the following equations such that $x \in \mathbb{N}$:

[a] $x - 4 = 1$ [b] $3x + 8 = 29$

....

....

(23) In a coordinate plane , draw Δ ABC where A (2 , 3) , B (5 , 3) and C (5 , 7) , then draw the image of Δ ABC by reflection across $\overleftrightarrow{BC}$



(24) Using the operation properties to find the value of :

[a] $8 \times 135 \times 125$ [b] $56 \times 42 - 56 \times 32$

....

....

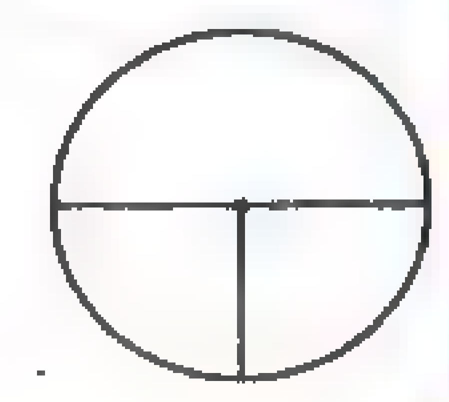
(25) If $X = \{x : x \in \mathbb{N} , 3 \le x \le 8\}$, $Y = \{1 , 3 , 5\}$, find :

[a] $X \cap Y$ [b] $X \cup Y$ [c] $Y - X$

....

(26) The following table shows the number of students who practice sports. Represent these data using pie graph on the opposite figure :

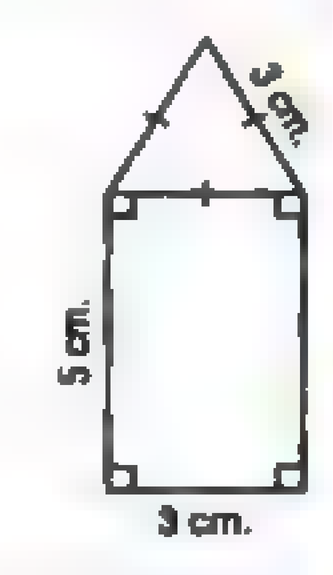
Game	Football	Basketball	Volleyball
Number	20	10	10



(27) Translate the statement into an equation :

If 9 is subtracted from a number , then the result is 23

....



(28) Find the perimeter of the opposite figure :

....

(29) Use the distribution property in ℕ to find : 319 × 101

....

(30) The following table shows the marks of 35 students in math exam :

Sets	5 –	10 –	15 –	20 –	25 –	Total
Frequency	5	9	k	6	4	35

[a] Find the value of k

[b] Represent these data by a frequency polygon.

Model 19

Answer the following questions :

1 ***Choose the correct answer :***

(1) The .... triangle has one line of symmetry.

(equilateral *or* isosceles *or* scalene)

(2) The sum of the two numbers x and y is 10 , then y = ...

($x - 10$ *or* $10 - x$ *or* x *or* 10)

(3) The area of triangle whose base length 5 cm. and the corresponding height 6 cm. is .... cm^2

(60 *or* 15 *or* 11 *or* 3)

(4) If x is an even number , then $x - 1$ is an .... number.

(even *or* odd *or* prime *or* othrwise)

(5) The area of square of diagonal length 6 cm. is .... cm^2.

(18 or 36 or 24 or 6)

(6) If $x - 2 = 4$, then $x + 1 =$ .... (6 or 3 or 7 or 5)

(7) 99 × the multiplicative neutral element in ℕ = ...

(0 or 99 or 100 or 1)

(8) If the ordered pair $(x , y) = (3 , 1)$, then y = ...

(3 or 1 or 2 or 4)

(9) The perimeter of equilateral triangle whose side is x cm. = ... cm.

($3 + x$ or $x - 3$ or $3x$ or $\frac{x}{3}$)

(10) A circumference of a circle is 22 cm. , then its radius length = ... cm. where $\pi = \frac{22}{7}$ (3.5 or 7 or 8 or 11)

(11) The sum of two natural numbers .... ℕ

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(12) (8 × 3) × 5 = ... × (3 × 5) (3 or 5 or 8 or 35)

(13) The geometric transformation [figure] is ....

(translation or rotation or reflection)

(14) 8 × 54 = ... (8 × 5 + 8 × 4 or 8 × 5 + 8 × 40 or 8 × 50 + 8 × 4)

2 *Complete each of the following :*

(15) The missing number in the pattern :

1 , 4 , 16 , 64 , ... , 1024 , 4096 is ....

(16) If A (2 , 3) , B (7 , 3) , then AB = ... length units.

(17) 273 × 53 + ... × 273 = 273 × 100

(18) 64 + (36 + ...) = (64 + ...) + 35 = ... + 35 = ...

(19) The rhombus whose area is 36 cm^2 and the length of one of its diagonals is 8 cm. , the length of the other diagonal = ... cm.

(20) The set of the natural numbers which are more than 4 and less than 5 is ....

3 *Answer the following :*

(21) The lengths of two adjacent sides in a parallelogram are 6 cm. and 8 cm. If its greater height is 4 cm. , then find its smaller height.

....

(22) Using the properties of addition find the value :

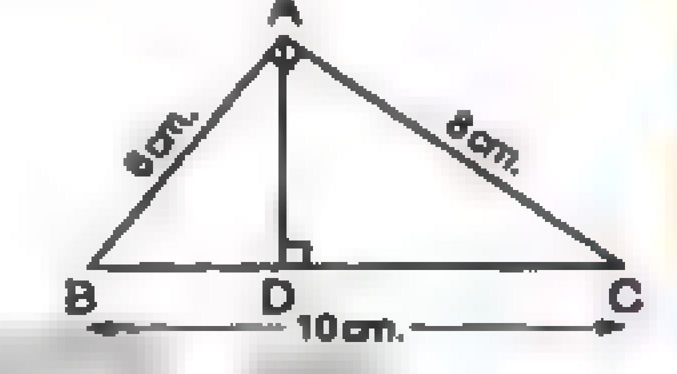
$$32 + 47 + 68 + 3$$

....

(23) **In the opposite figure :**

ABC is a right-angled triangle at A , $\overline{AD} \perp \overline{BC}$

Find the area of Δ ABC and the length of $\overline{AD}$



....

....

(24) Represent each set of the following on the number line :

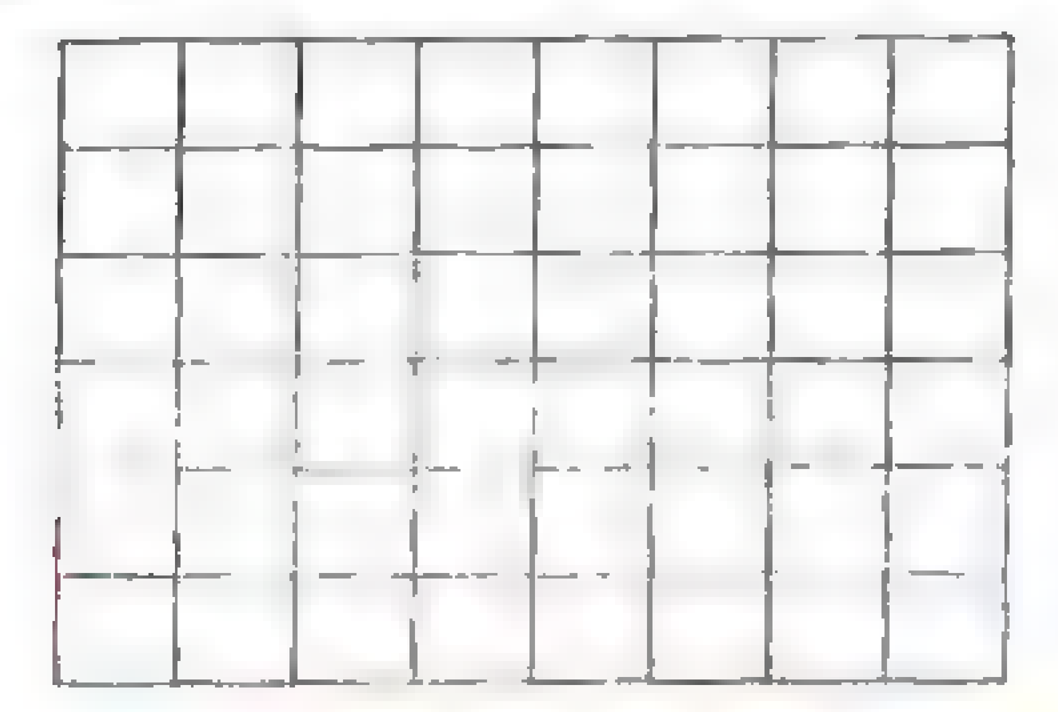
[a] {0 , 1 , 3 , 4}

[b] {1 , 2 , 4} ∪ {1 , 3 , 4 , 5}

....

....

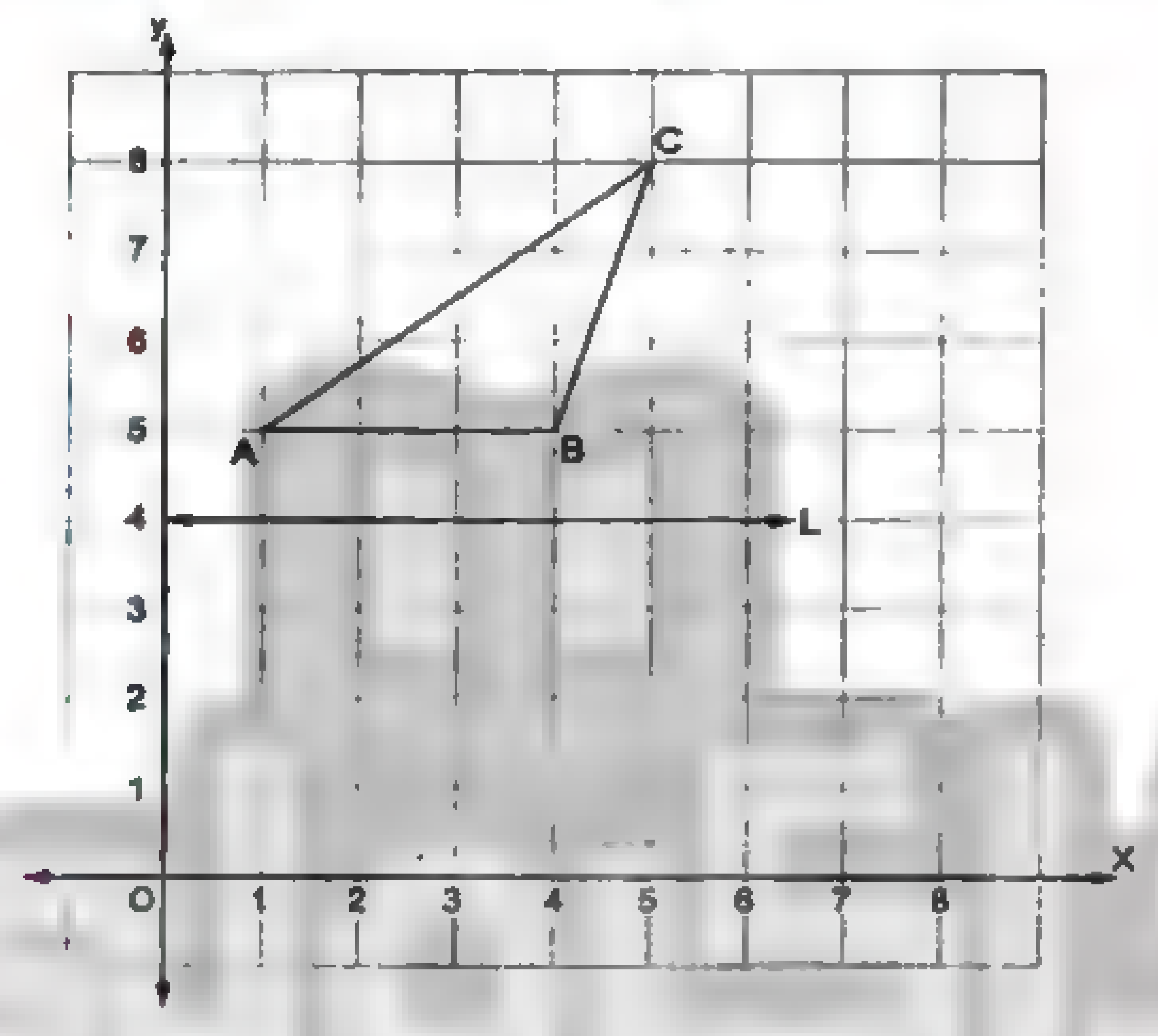
(25) In a 2-dimensional coordinate plane , locote the points A (2 , 0) , B (6 , 0) , C (6 , 4) and D (2 , 4) , then name the shape ABCD and find its area.



(26) The product of a number k and 7 is 56 , find the number k

....

(27) Draw the image of the following figure by reflection across L :



(28) Solve the equations in ℕ :

[a] $5x - 7 = 33$ [b] $4 + x = 18$

....

....

(29) Use the distributive property to find the value of : $16 \times 999 + 16$

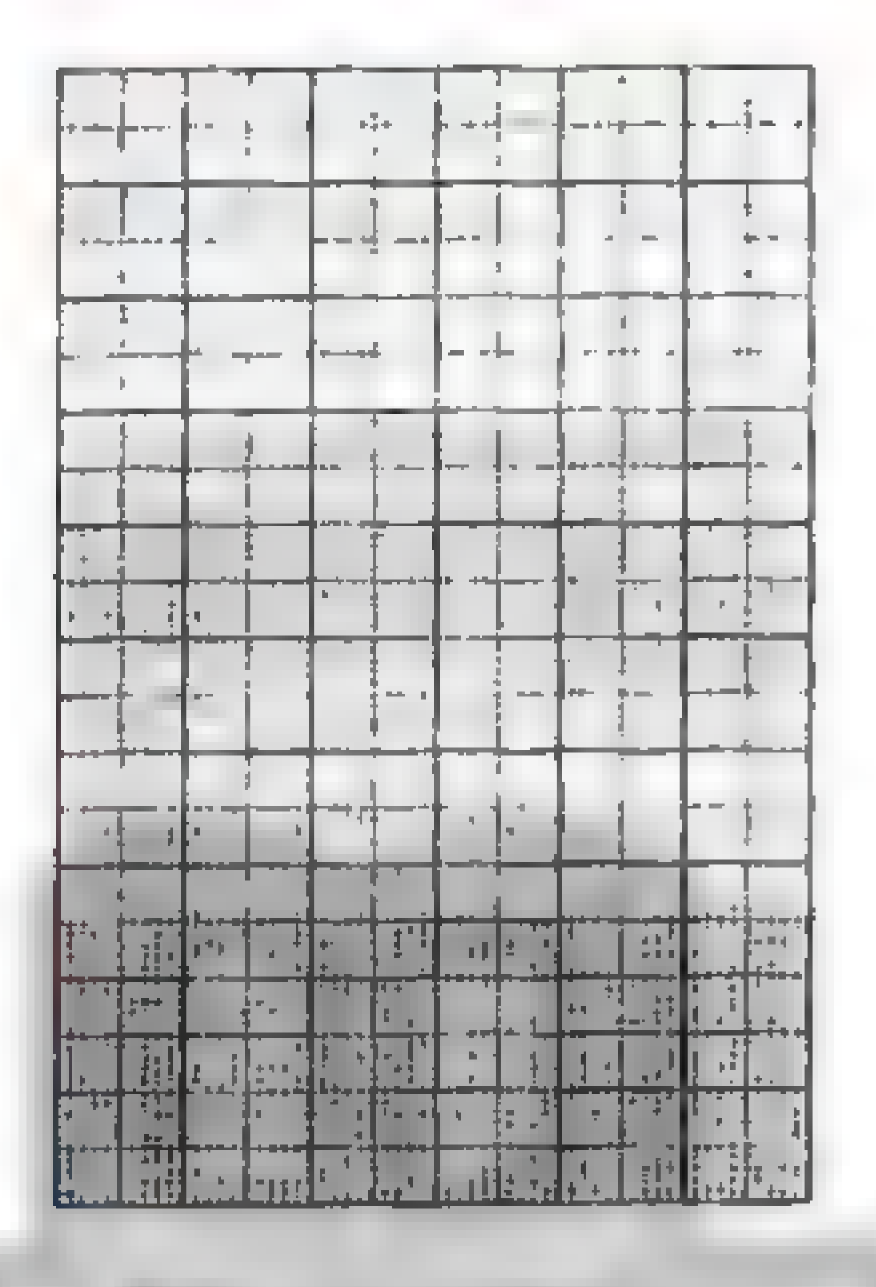
....

(30) The following table represents the marks of 50 students in a maths exam in a month , where the full mark is 50 :

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

[a] Draw the frequency polygon which represents the given data.

[b] Find the number of students who got 30 marks or more.



Model 20

Answer the following questions :

1 ***Choose the correct answer :***

(1) If ℕ is the set of natural numbers , a ∈ ℕ , b ∈ ℕ

, then a × b .... ℕ (∈ or ∉ or ⊂ or ⊄)

(2) 5 × (100 – ....) = 5 × 98 (1 or 2 or 98 or 0)

(3) The area of rhombus whose diagonals are 5 cm. and 8 cm.

= .... cm^2. (40 or 20 or 26 or 13)

(4) If $x + 4 = 10$, then $2x$ = ... (14 or 6 or 12 or 24)

(5) $\frac{0}{7}$ .... ℕ (∈ or ∉ or ⊂ or ⊄)

(6) Twice of a number x subtracted from it 5 is ....

($x - 5$ or $2x + 5$ or $2x - 5$ or $5x$)

(7) The number of axes of symmetry of the rectangle = ...

(0 or 1 or 2 or 3)

(8) The circumference of a circle whose radius length 7 cm.

= .... $\left(\pi = \frac{22}{7}\right)$ (11 or 22 or 44 or 88)

(9) The additive neutral element in ℕ is .... (0 or 1 or 3 or 5)

(10) If $x = 2$ and $y = 7$, then $\frac{2y}{x} =$ .... (14 or 3 or 3.5 or 7)

(11) If $X = \{x : x \in \mathbb{N} , x < 3\}$, then X = ...

({1 , 2} or {2} or {0 , 1 , 2} or {0 , 1 , 2 , 3})

(12) If 3 a + 2 b = 11 , then the constant is ....

(3 or 2 or 11 or a)

(13) The opposite transformation  is ....

(translation or reflection or rotation)

(14) The triangle whose base length is 3 cm. and its corresponding height is 4 cm. , its area = ... cm. (14 or 7 or 6 or 12)

2 Complete each of the following :

(15) The square whose perimeter is 32 cm. , its area = ... cm^2

(16) 1 , 4 , 8 , 13 , ... , ... (in the same pattern)

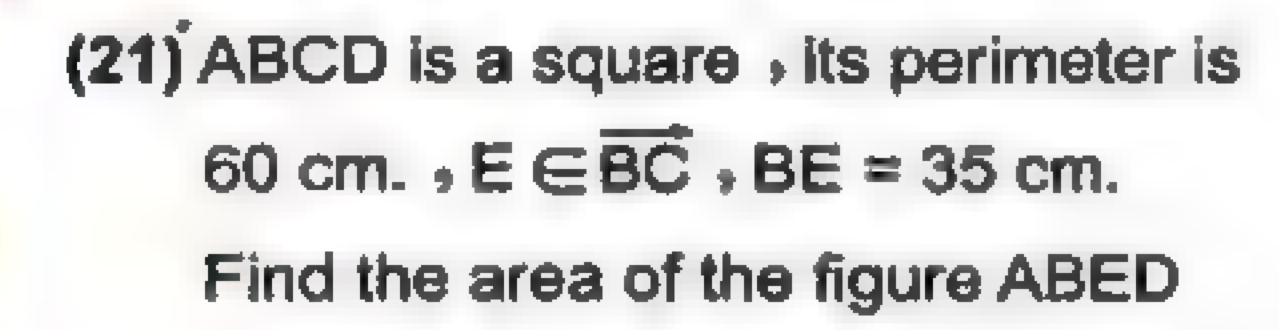
(17) Any even number × any odd number = ... number.

(18) If 482 = x + (8 × 10) + (4 × 100) , then $x =$ ....

(19) The set of prime numbers which are less than 10 is ....

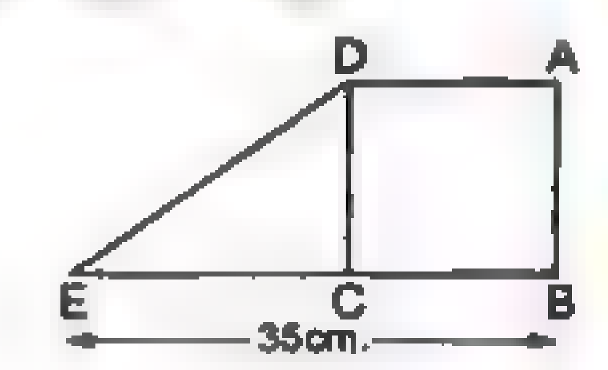
(20) Ahmed had x pounds , he bought a pen for 3 pounds , now Ahmed has .... pounds.

3 Answer the following :



(21) ABCD is a square , its perimeter is 60 cm. , E $\in \overleftrightarrow{BC}$, BE = 35 cm.

Find the area of the figure ABED



....

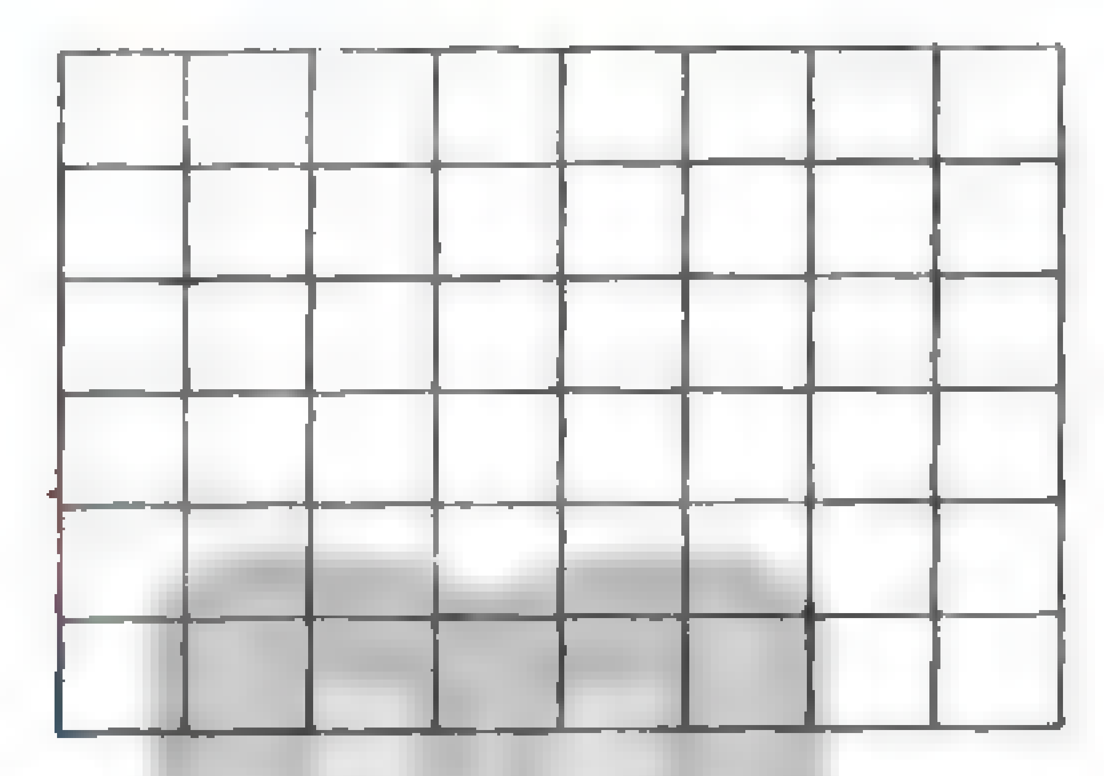
(22) Solve the equations in $\mathbb{N}$:

[a] $22 = x + 10$ [b] $\frac{1}{2}$ y + 1 = 3

....

....

(23) In the cartesian plane draw Δ ABO in which A (3 , 2) , B (3 , 5) and O (0 , 0) , then draw its image by reflection in $\overleftrightarrow{AB}$



(24) Find the seventh term in the sequence :

1 , 3 , 7 , 15 , 31 , ...

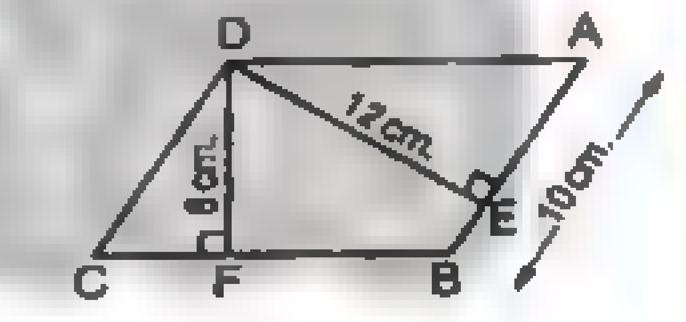
(25) Use the properties of the operations to find the result of :

[a] 25 × 31 × 4 [b] 28 + 17 + 72 + 83

....

....

(26) In the opposite figure :



ABCD is a parallelogram in which

AB = 10 cm. , DE = 12 cm. , DF = 8 cm.

Find : [a] The area of the parallelogram ABCD

[b] The length of $\overline{BC}$

....

....

(27) Write the symbolic expression 3 h – 4 in words.

....

(28) The area of a square is 50 cm² , find the length of its diagonal.

....

(29) Use the distribution property in ℕ to find :

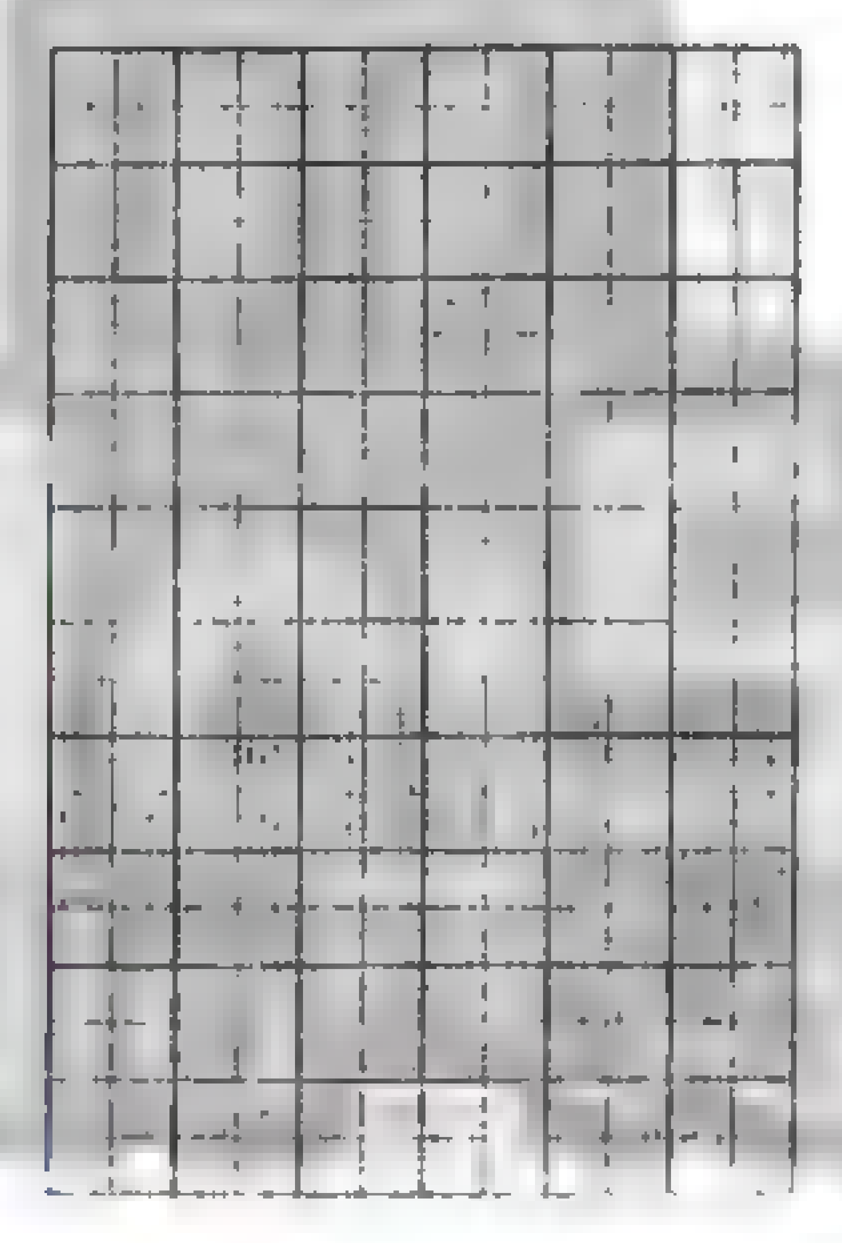
$$47 \times 18 + 47 \times 82$$

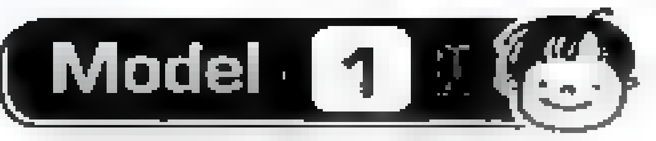
....

(30) The following table shows the frequency distribution of the number of work hours of 50 workers :

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represents these data.





Model 1

Answer the following questions :

1 ***Circle the true answer :***

(a) The sum of two natural numbers .... $\mathbb{N}$
($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(b) If $x + 3 = 5$, $x \in \mathbb{N}$, then $x =$ .... (1 or 2 or 3 or 4)

(c) The area of a rhombus whose diagonals lengths are 6 cm. and 8 cm. is .... cm^2 (48 or 12 or 24 or 40)

2 (a) ***Complete to make the sentence true :***

(1) The circumference of a circle with radius lengths 10 cm. is .... π cm.

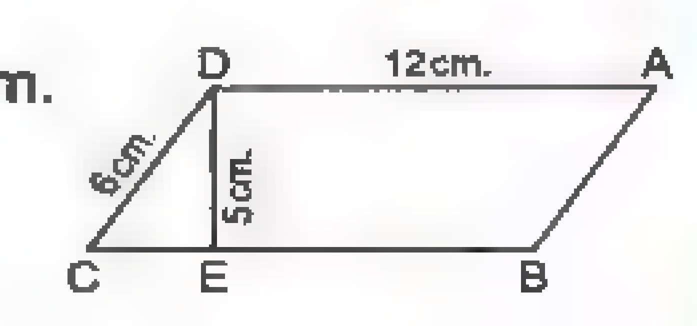
(2) For any natural numbers a , b and c where (a × b) × c = a × (b × c) is called .... property.

(b) Which is greater in area : a square whose diagonal length is 10 cm. or a right angled triangle whose legs are 8 cm. and 15 cm. ?

3 Ahmed has L.E. x , Samir has L.E. 10 and the sum of what Samir has and the twice of what Ahmed has is L.E. 24 , Write an equation to represent this situation and find the value of x.

4 (a) In a 2-dimensional coordinate plane : Draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of the triangle ABC by reflection across $\overleftrightarrow{BC}$ and find the sum of areas of the triangle and its image.

(b) **In the opposite figure :** ABCD is a parallelogram , where AD = 12 cm. , CD = 6 cm. , DE = 5 cm. and $\overline{DE} \perp \overline{BC}$. Find the area of the parallelogram , then calculate its height drawn from point D on $\overleftrightarrow{AB}$.



5 (b) ***Compare using > , < or = :***

(1) The additive neutral element in $\mathbb{N}$ .... the multiplicative neutral element in $\mathbb{N}$.

(2) The value of x , when $x + 1 = 3$ .... the value of x when $2x = 6$

(b) **The following frequency table shows the marks of 35 students in the math exam. Graph these data using the frequency polygon.**

Sets	5 –	10 –	15 –	20 –	25 –	Total
Frequency	5	9	11	6	4	35



Answer the following questions :

1 ***Complete to get a true sentence :***

(a) The area of a square = $\frac{1}{2}$ the product of .... × ....

(b) For a ∈ ℕ , b ∈ ℕ , then a × b .... ℕ

(c) 23 × (92 + 8) = 23 × .... = ...

(d) If X = {x : x ∈ ℕ , 1 ≤ x < 5} , then X = {........ , ... , ... , ...}

2 (a) ***Circle the true answers :***

(1) The area of a triangle whose base length 5 cm. and the corresponding height 6 cm. is .... cm² (30 or 15 or 25 or 36)

(2) If the set of even numbers is E , then E .... ℕ (∈ or ∉ or ⊂ or ⊄)

(3) If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. where π = $\frac{22}{7}$ (3.5 or 7 or 22 or 44)

(b) ***Draw the rectangle ABCD where AB = 2 cm. , BC = 3 cm. and find its image by reflection across $\overleftrightarrow{CD}$***

3 (a) ABCD is a rhombus in which AC = 10 cm. and BD = 8 cm.

(1) Find its area.

(2) Find the image of Δ ABC by reflection across $\overleftrightarrow{AC}$.

(b) Hatem bought 3 notebooks , where the price of each is L.E. x. He gave the seller L.E. 20 and he still has L.E. 5. Write an equation to represent this information and find x.

4 (a) In 2-dimensional coordinate plane locate the points A (3 , 0) , B (5 , 0) , C (0 , 5) and D (0 , 3). Find the area of the shape ABCD.

(b) **Use the commutative and associative properties in ℕ to calculate :**

872 + 199 + 128 + 801



5 (a) **In the opposite figure :** There is a window which has the form of a square whose side length is 70 cm. , and above it , there is a semicircle. **Calculate.**

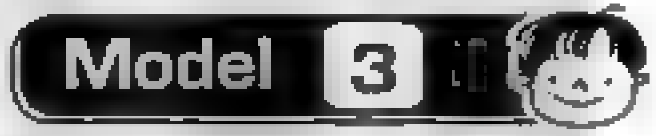


(1) The perimeter of the window.

(2) If the area of the window is 6825 cm^2 , then find the area of the semicircle.

(b) **The following is a frequency distribution for the working hours of 50 workers. Graph these data using the frequency polygon.**

Sets	2 –	4 –	6 –	8 –	10 –	Total
Frequency	8	9	15	16	2	**50**



Answer the following questions :

1 ***Circle the true answer :***

(a) If $x + 7 = 19$, $x \in \mathbb{N}$, then x = ... (26 *or* 12 *or* 11 *or* 13)

(b) The area of a square whose diagonal length 6 cm. is ....

(18 cm^2 *or* 36 cm^2 *or* 12 cm^2 *or* 6 cm^2)

(c) If : $X = \{x : x \in \mathbb{N} , 3 < X < 4\}$, then $x \in$ ....

($\varnothing$ *or* {3 , 4} *or* {3} *or* {4})

2 (a) **Complete to get a true sentence :**

(1) The circumference of a circle whose diameter length x cm. is ...... cm.

(2) If the area of a rhombus is 16 cm^2 and the length of one diagonal is 4 cm. , then the length of the other diagonal is .... cm.

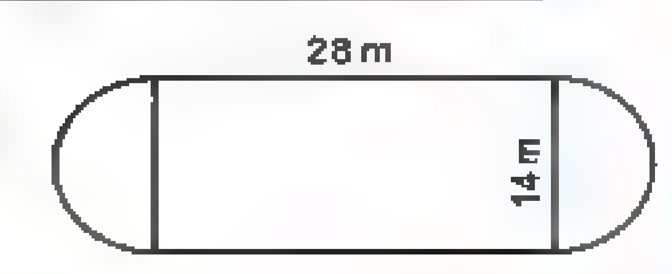
(b) Which is greater in area : A rhombus whose diagonals are 6 cm. and 8 cm. , or a square whose diagonal is 8 cm.

(c) Solve $2x + 9 = 21$, $x \in \mathbb{N}$

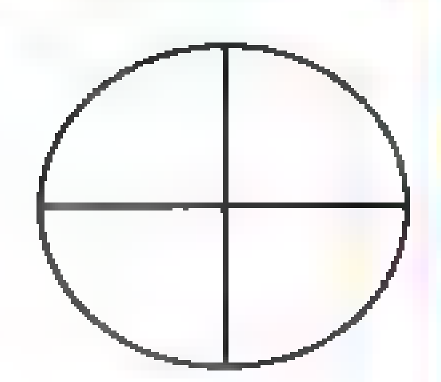
3 (a) In a 2 – dimensional coordinate plane , locate the points A (5 , 0) , B (9 , 0) , C (9 , 4) and D (5 , 4). Name the shape ABCD and find its area.

(b) **Use operations properties in $\mathbb{N}$ to calculate :** 25 × 9892 × 4

4 The opposite figure shows a football playground.
Find the distance around the figure when $\pi = \frac{22}{7}$



5 **The following table shows the number of students who practice sports.**
Represent these data using pie graph on the opposite figure :



Game	Football	Basketball	Volleyball
Number	20	10	10



Answer the following questions :

1 ***Circle the true answers :***

(a) $6 + 15 \div 3 \times 5 - 30 =$ .... (5 or 25 or 1 or 10)

(b) If $3x = 15$, $x \in \mathbb{N}$, then $x =$ .... (5 or 12 or $\frac{1}{5}$ or $\frac{1}{3}$)

(c) The area of a rhombus whose diagonals 10 cm. and 20 cm. is .... cm² (200 or 30 or 100 or 400)

2 ***Complete to get a true sentence :***

(a) The circumference of a circle whose radius length $r = \pi \times$ ....

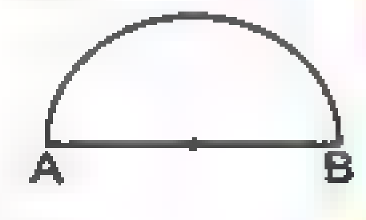
(b) If A (2 , 3) and B (2 , 7) , then C (........ , ...) is the midpoint of $\overline{AB}$.

(c) The length of the diagonal of a square with area 50 cm² = ...

(d) The area of a parallelogram whose base length is 8 cm. and height 2.5 cm. is .... cm²

3 (a) ***In the opposite figure :***

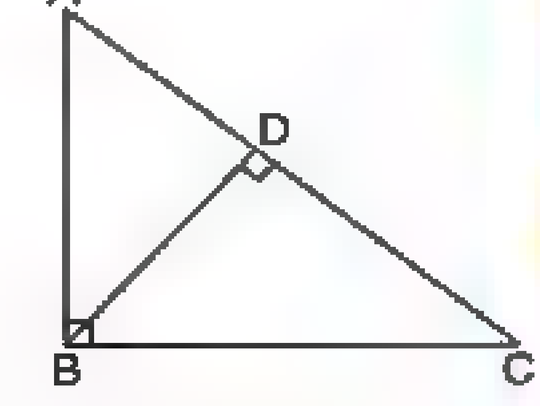
The length of the diameter $\overline{AB}$ of a semicircle is 14 cm.
Find the distance around the figure $\left(\pi = \frac{22}{7}\right)$



(b) **Use operations properties to calculate : 653 + 548 + 347**

4 (a) If $X = \{x : x \in \mathbb{N} , 3 \le x < 8\}$. Use the listing method to write X then represent its elements on a number line.

(b) Δ ABC is a right-angled triangle at B , AB = 6 cm. , BC = 8 cm. and AC = 10 cm. Find the area of the triangle , then draw $\overline{BD} \perp \overline{AC}$ and find the length of $\overline{BD}$.

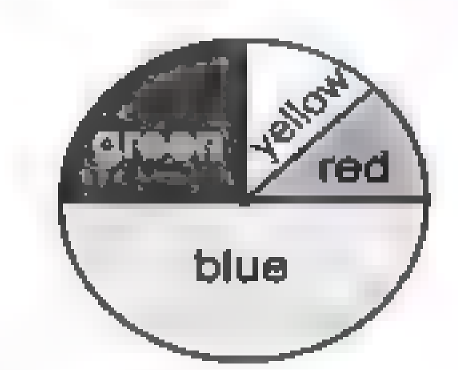


(c) Three times of a natural number x is 8 more than the multiplicative neutral. Express this information in an equation and solve it for x.

5 (a) Draw Δ ABC where A (2 , 5) and B (5 , 2) and C (5 , 8) , then find its image by reflection across $\overleftrightarrow{BC}$.

(b) A farm has an area of 24 feddans planted with fruit , vegetables , flowers and plam trees and it is represented by the opposie figure.

Complete :



(1) The area planted with vegetables is 12 feddans and it is represented by the ……… colour.

(2) The green sector represents the area planted with fruit and it has an area of ……… feddans.

(3) The area planted with flowers = the area planted with palm trees = ……… feddans.



Answer the following questions :

1 ***Complete the following :***

(a) The set of even numbers (E) – The set of odd numbers (O) = ………

(b) The multiplicative neutral element in ℕ is ………

(c) Shorouk saved x pounds , her father gave her 10 pounds , then she has ……… pounds

(d) The sum of two numbers is 21 one the them is x , than the other = ………

(e) The side length of a square is 10 cm. , then its area = ………

2 ***Choose the correct answer from these between brackets :***

(a) The set of even numbers ……… the set of natural numbers.

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(b) If x is an odd number , then $x + 3$ is ……… number.

(odd or even or prime)

(c) Twice the number x subtracted 3 from it = ………

($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

(d) The base length of a triangle is 8 cm. and its height is 5 cm. , then its surface area = ... (40 cm. **or** 40 cm² **or** 20 cm²)

(e) The number of axes of symmetry of the rhombus equals .... (zero **or** 1 **or** 2 **or** 4)

3 **(a)** Five even natural numbers , the greatest number is $x + 13$, write down these numbers.

(b) Which is greater in area : A rhombus in which the lengths of its diagonals are 8 cm. and 6 cm. or the parallelogram in which the length of its base is 10 cm. and the corresponding height is 5 cm. , then calculate the difference between them.

4 **(a)** Zahraa saved 14 pounds , she bought 3 notebooks of x pound for each. The remainder with her was 8 pounds. Express these situations by an equation.

(b) Calculate the perimeter of the opposite figure where AM = 35 cm. $\left(\pi = \frac{22}{7}\right)$



5 **(a)** In the cartesian coordinates plane determine the points. A (2 , 2) , B (5 , 2) , C (5 , 8) and D (2 , 8). If $\overleftrightarrow{BC}$ is the axis of reflection of the figure ABCD , then determine the image of the figure ABCD.

(b) The following table shows the marks of 50 pupils in exam of mathematics in one of months where the full mark is 50 marks. Draw the frequency histogram and the frequency polygon which represent these date.

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50



Answer the following questions :

1 ***Choose the correct answer from those given :***

(a) (3 + 9) .... ℕ (⊂ **or** ∈ **or** ⊄ **or** ∉)

(b) If : x (75 + 10) = 9 × 85 , then x = ... (5 **or** 85 **or** 9 **or** 8)

(c) A rhombus in which the lengths of its diagonals are 10 cm. and 12 cm. , its area = ... cm^2 (120 or 60 or 24 or 32)

(d) "Subtract 4 from twice the number y" the symbolic expression for this situation is .... ($y - 4$ or $2y - 4$ or $y + 4$ or $2y + 4$)

(e) If x is an odd number , then $x + 2$ is ...... number. (even or odd or prime or otherwise)

2 ***Complete the following :***

(a) $32 + (59 + \dots\dots) = (32 + 68) + \dots\dots$

(b) The number of axes of symmetry of the rhombus = ...

(c) The perimeter of the equilateral triangle whose side length is ℓ cm. = ...

(d) The area of the square = $\frac{1}{2}$ ......

(e) 1 , 4 , 8 , 13 , ... in the same pattern.

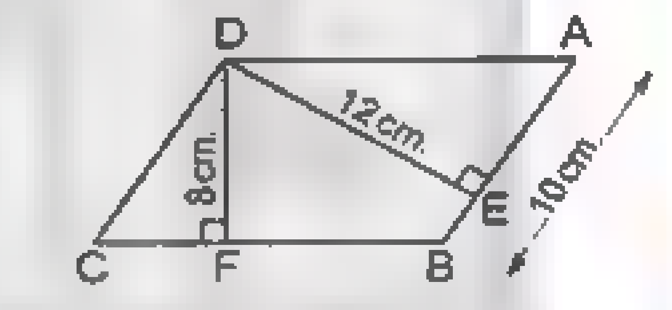
3 **(a)** Which is greater in area. The triangle whose base length is 12 cm. and height = 8 cm. or the parallelogram in which the length of the base = 10 cm. and its height = 5 cm.

(b) In the opposite figure :

ABCD is a parallelogram in which AB = 10 cm. , DE = 12 cm. , DF = 8 cm. **Find :**

(1) The area of the parallelogram ABCD

(2) The length of $\overline{BC}$



4 The length of $\overline{BC}$ by measuring.
In the two dimensions cartesian coordinates. Determine the points A (2 , 5) , B (5 , 2) , C (5 , 8) , draw the figure ABC then find :

(a) The length of $\overline{BC}$ by measuring

(b) Draw the image of Δ ABC by reflection in $\overleftrightarrow{BC}$

(c) How many axes of symmetry of the resulted figure and find its area.

5 **(a) Solve the following equations :**

(1) $x + 3 = 12$, $x \in \mathbb{N}$ **(2)** $2x + 9 = 21$, $x \in \mathbb{N}$

(b) The following table shows the marks of 35 pupils in mathematics exam. in one of months where the full mark is 50. Draw the frequency polygon which represents these data.

Sets	10 –	20 –	30 –	40 –	Total
Frequency	8	12	10	5	35

Model 7

Answer the following questions :

1 ***Choose the correct answer from those given :***

(a) If $x + 8 = 15$, $x \in \mathbb{N}$, then $x =$ .... (3 *or* 7 *or* 6 *or* 5)

(b) The square whose diagonal length is 8 cm. its area = ... cm^2 (64 *or* 32 *or* 16 *or* 8)

(c) If $X = \{x : x \in \mathbb{N} , 3 \leq x < 5\}$, then $x \in$ .... ({4} *or* {3} *or* {3 , 4} *or* {4 , 5})

(d) If O is the set of odd number , then O .... $\mathbb{N}$ ($\subset$ *or* $\in$ *or* $\not\subset$ *or* $\notin$)

(e) The triangle whose base length is 5 cm. , and the corresponding height of it is 6 cm. , its area = ... cm^2 (30 *or* 15 *or* 25 *or* 36)

2 ***Complete the following :***

(a) 64 + (36 + ...) = (64 + ...) + 35 = ... + 35 = ...

(b) The rhombus whose area is 36 cm^2 and the length of one of its diagonals is 8 cm. , the length of the other diagonal = ... cm.

(c) The square whose area is 72 cm^2 , the length of its diagonal = ... cm.

(d) 1 , 4 , 8 , 13 , ... in the same pattern.

(e) If : $4 + x = 15$, then $x =$ ....

3 (a) The length of the diameter of the wheel of a bicycle is 56 cm. Calculate the covered distance if the wheel turns one turn and what the number of turns to cover distance 352 metres $\left(\text{where } \pi = \frac{22}{7}\right)$

(b) If the number x exceeds twice the number (y) by 7. Write down the mathematical relation which relates x by y.

(c) **If the age of a man now is x years where $x \in \mathbb{N}$ Find :**

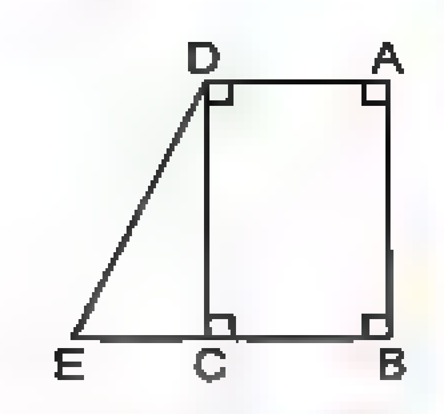
(1) The age of the man after 7 years.

(2) The age of the man since 10 years.

4 (a) **Using the properties of commutation , distribution and association Find the value of each of the following :**

(1) $8 \times 137 \times 125$ **(2)** $28 + 59 + 72$

(b) **In the opposite figure :**



ABCD is a rectangle of area 828 cm^2

$E \in \overrightarrow{BC}$, AD = 23 , BE = 35 cm.

Find the area of Δ DCE

5 **(a)** **The following table shows the marks of 40 pupils in mathematics exam.**

(1) Find the value of A

(2) Draw the frequency histogram and the frequency polygon which represent these date.

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	5	7	12	A	7	40

(b) In the orthogonal cartesiancoordinates locate the points. A (8 , 2) , B (3 , 2) , C (3 , 6) , D (8 , 6) , then complete :

(1) The length of $\overline{AB}$ = ... unit.

(2) The length of $\overline{BC}$ = ... unit.

(3) The figure ABCD is ....

(4) The perimeter of the figure ABCD = ... unit.



Answer the following questions :

1 ***Choose the correct answer from those between brackets :***

(a) A parallelogram in which , the lengths of two adjancent sides are 5 cm. and 7 cm. , the length of the smaller height = 4 cm. , then its area = ... cm^2 (20 or 10 or 28 or 14)

(b) 7 is subtracted from the number x = ... ($7 - x$ or $2x - 7$ or $7x + 2$ or $14x$)

(c) If : X = $\{x : x \in \mathbb{N} , x < 3\}$, then $x \in$ .... ({1 , 2} or {0 , 1} or {2} or {0 , 1 , 2})

(d) The next number in the pattern 1 , 3 , 9 , 27 , ... (30 or 33 or 36 or 81)

(e) The length of the base of the triangle whose area is 120 cm^2 and its height is 5 cm. = ... cm. (12 or 48 or 24 or 6)

2 ***Complete the following :***

(a) If : $3x + 7 = 19$, $x \in \mathbb{N}$, then $x =$ ....

(b) The circle whose diameter length is 14 cm. , its circumference = ... cm. (where $\pi = \frac{22}{7}$)

(c) The set of prime numbers which are less than 17 is ....

(d) The perimeter of a rectangle is 16 cm. its width is 3 cm. , then its area = ... cm^2

(e) $74 \times (73 + 27) = 74 \times$ .... = ...

3 (a) **Use the distribution property to find the value of :**

(1) 519×99 (2) 316×1001

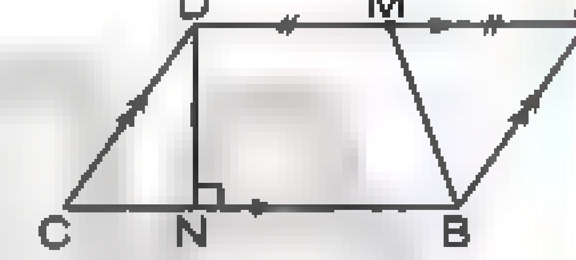
(b) **In the opposite figure :** ABCD is a parallelogram in which BC = 14 cm. and the area of the parallelogram = 112 cm^2 M is the midpoint of $\overline{AD}$

Complete :

(1) DN = ... cm.

(2) The area of Δ BAM = ... cm^2

(3) The area of the figure MBCD = ... cm^2



4 **In the cartesian coordinates plane :**

(a) locate the points : A (5 , 9) , B (9 , 7) , C (5 , 5) , D (1 , 7) , E (9 , 5)

(b) Draw the line segments $\overline{AB}$, $\overline{AD}$, $\overline{CD}$, $\overline{BC}$

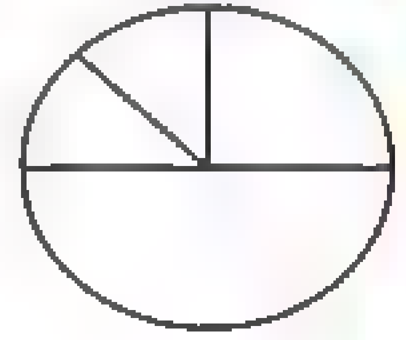
(c) If $\overleftrightarrow{CE}$ is the axis of reflection of the figure ABCD , then determine its image and determine each of the ordered pairs which represent the vertices of the image.

(d) The figure ABCD is a .... and the area of the figure ABCD = ... square units.

5 (a) **Solve each of the following equations :**

(1) $482 = x + (8 \times 10) + (4 \times 100)$ (2) $x \times 3 + x \times 60 = 4 \times 63$

(b) An employee spends his monthly salary as follow 1000 pounds for food. 500 pounds for clothes 250 pounds the rent of the flat , 250 pounds other spending. Represent these data on the shown circular sectors.



Model 9

Answer the following questions :

1 ***Choose the correct answer from those given :***

(a) If X = {x : $x \in \mathbb{N}$, $2 \le x \le 3$} , then $x =$ ....
({3 , 2} *or* {3} *or* {2} *or* ∅)





(b) (49 ÷ 8) .... ℕ (∈ or ∉ or ⊂ or ⊄)

(c) A rhombus of area 30 cm^2 , the length of one of its diagonals is 6 cm. , then the length of the other diagonal = ... cm. (4 or 6 or 8 or 10)

(d) The diameter length of circle whose circumference = 88 equals .... cm. $\left(\pi = \frac{22}{7}\right)$ (28 or 14 or 7 or 21)

(e) The length of the base of the triangle is 8 cm. and its height is 5 cm. , then its area = ... cm^2 (9 or 40 or 8 or 20)

2 ***Complete the following :***

(a) The set of the natural numbers which are more than 4 and less than 5 is ....

(b) If we add 5 to three times of the number y , then we get the number ....

(c) The perimeter of a rectangle is 16 cm. , its width is x cm. , then its length = ... cm.

(d) The square whose area is 18 cm^2 , the length of its diagonal = ...

(e) If 945 = (x × 100) + 45 , then x = ...

3 **(a) Solve each of the following equations :**

(1) $\frac{1}{3}x + 8 = 10$ **(2)** $\frac{1}{6}x - 3 = 2$

(b) The area of a rectangle equals the area of a square whose diagonal length is 12 cm. Find the perimeter of the rectangle if its width equals 8 cm.

4 **(a)** If the length of the diameter of the wheel of a bicycle is 50 cm. How long is the distance covered by the bicycle in metre. If it turns 1200 turns. (where π = 3.14)

(b) In the orthogonal cartesian coordinates.

(1) Locate the points A (8 , 5) , B (8 , 2) , C (5 , 7) , D (5 , 2)

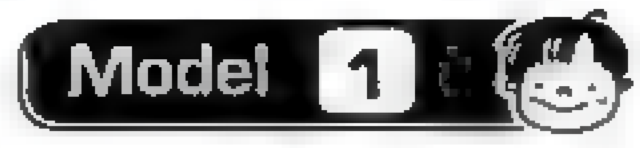
(2) If $\overleftrightarrow{CD}$ is the axis of reflection of the figure ABDC , determine the image of the figure using the suitable symbols also determine each of the ordered pairs which represent the images of the vertices.

5 **The following table shows the frequency distribution of the number of work hours of 50 workers.**

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represent these date.

Model Examinations



Model 1

Answer the following questions :

1 ***Choose the correct answer :***

(a) Number of axes of symmetry of square = ... (1 or 2 or 3 or 4)

(b) If : $X = \{x : x \in \mathbb{N} , 3 \leq x < 5\}$, then x = ...

({4} or {3} or {3 , 4} or {4 , 5})

(c) x and y are two numbers where their sum is 20 , then y = ...

($20 + x$ or $20 - x$ or $x - 20$ or $\frac{x}{20}$)

(d) If : O is the set of odd numbers , then O .... $\mathbb{N}$

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 ***Complete the following :***

(a) The length of the diagonal of square is 8 cm. , then its area = ... cm^2

(b) If : $16 - x = 9$, then x = ...

(c) The type of the opposite transformation is a ....



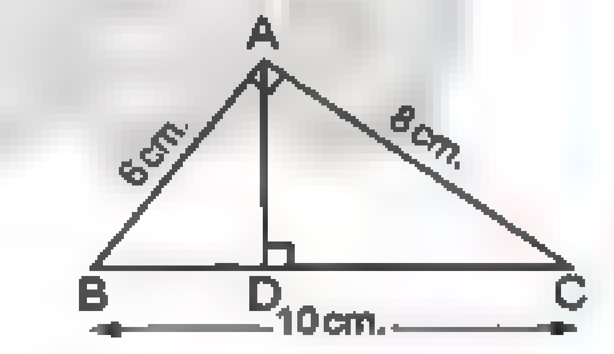
(d) 1 , 1 , 2 , 3 , 5 , 8 , ... , ... (in the same pattern)



3 (a) ***In the opposite figure :***

ABC is a right-angled triangle at A , AB = 6 cm. , AC = 8 cm. , BC = 10 cm. , $\overline{AD} \perp \overline{BC}$

find the length of $\overline{AD}$



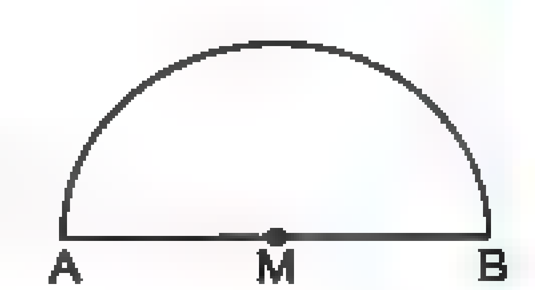
(b) ***Use the properties of addition in $\mathbb{N}$ to find the result of :***

873 + 199 + 127 + 801 (write the used property)

4 (a) ***Solve the equation :***

$2x + 3 = 5$ where $x \in \mathbb{N}$

(b) Calculate the perimeter of the opposite figure where AM = 35 cm. $\left(\pi = \frac{22}{7}\right)$





5 (a) On coordinate plane draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of Δ ABC by reflection in $\overleftrightarrow{BC}$

(b) ***Draw the frequency polygon which represent these data.***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	8	12	9	6	35



Model 2

Answer the following questions :

1 ***Choose the correct answer :***

(a) (5 – 7) ········ ℕ (⊂ or ∈ or ⊄ or ∉)

(b) The type of the opposite transformation is a ·········

(translation or reflection or rotation)

(c) If : $x - 3 = 5$, $x \in ℕ$, then $x =$ ········· (8 or 2 or 6 or 7)

(d) The set of even numbers (E) ∩ the set of prime numbers (P) ······ ····

(P or ∅ or ℕ or {2})

2 ***Complete the following :***

(a) The multiplicative neutral element in the natural numbers plus 99 = ·········

(b) The length of a rectangle exceeds the width by 5 , If the width of the rectangle = x cm. , then the length of the rectangle = ·········

(c) The number of axes of symmetry of the rhombus = ·········

(d) The rhombus whose area 24 cm^2. and the length of one of its diagonals is 8 cm. the length of the other diagonal = ····· ···· cm.

3 (a) Which is greater in area a triangle whose base length is 10 cm. and height = 7 cm. or a parallelogram. in which the length of the base = 8 cm. and its corresponding height = 4 cm.

(b) ***Using the properties of commutation and association , find the value of each of the following :***

(1) 8 × 149 × 125 (2) 28 + 78 + 72

4 (a) ***If the age of a man now is x years where $x \in ℕ$ Find :***

(1) The age of the man after 3 years.

(2) The age of the man since 5 years.

(b) A circle of circumference 66 cm.
Find the length of its diameter. $\left(\pi = \frac{22}{7}\right)$

5 **(a)** ***In the coordinate plane :***
Draw the figure ABCD in which A (2 , 3) , B (2 , 5) , C (5 , 5) and D (5 , 2) , then draw its image by reflection in $\overleftrightarrow{CD}$

(b) ***The following table shows the frequency distribution of the number of work hours of 50 workers.***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency histogram and frequency polygon which represent these data.



Answer the following questions :

1 ***Choose the correct answer :***

(a) The number of axes of symmetry of the parallelogram = ……… (0 or 1 or 2 or 4)

(b) The area of a square is 72 cm^2 , then the length of its diagonal is ……… (8 or 7 or 9 or 12)

(c) The difference between two numbers is 7 the smaller is y , then the greater number = ……… (7 y or 7 – y or y – 7 or 7 + y)

(d) The least prime number × any prime number = ……… number (odd or even or prime)

2 ***Complete the following :***

(a) The additive neutral element in ($\mathbb{N}$) is ……… , while the multiplicative neutral element in $\mathbb{N}$ is ………

(b) If : 86 × 15 = 86 × x + 86 × 10 , then x = ………

(c) If we add 7 to three times the number y then we shall get the number ………

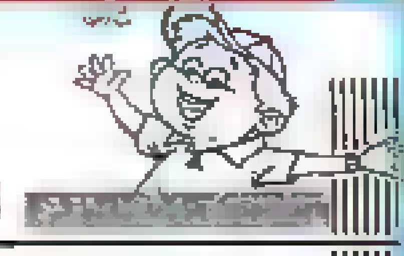
(d) If A (2 , 3) and B (2 , 7) , then C (……… , ………) is the midpoint of $\overline{AB}$

3 **(a)** ***Use the distributive property to get the product in each of the following :***

(1) 98 × 37 **(2)** 299 × 17

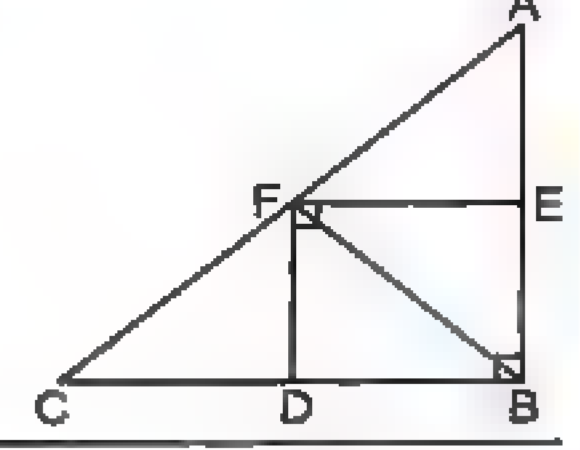
(b) ***Solve each of the following equations :***

(1) $3x + 8 = 29$ **(2)** $\frac{1}{7}x - 3 = 1$



4 (a) ***The length of the diagonals of a rhombus are 12 cm. and 16 cm. and its height is 9.6 cm. find its side length.***

(b) ***In the opposite figure complete :***



(1) Δ BEF is the image of Δ AEF by reflection in $\overleftrightarrow{\cdots\cdots}$

(2) Δ BDF is the image of Δ CDF by reflection in $\overleftrightarrow{\cdots\cdots}$

5 (a) If the length of the diameter of the wheel of a bicycle is 50 cm. How long is the distance covered by the bicycle in metre. If it turns 1 000 turns (π = 3.14)

(b) **Represent the following data by the frequency polygon :**

Sets	5 –	10 –	15 –	20 –	25 –
Frequency	6	12	19	12	4



Answer the following questions :

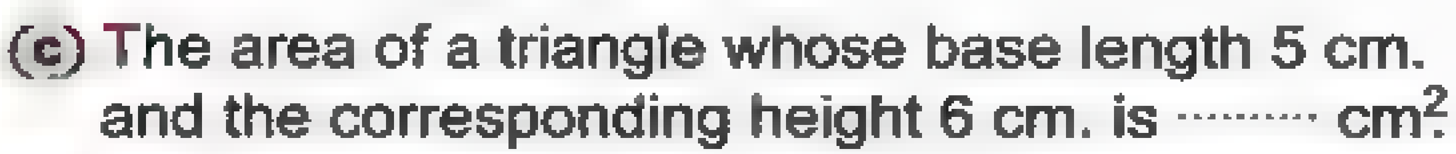
1 ***Choose the correct answer :***

(a) If : x is an odd number , then $x + 2$ is ……… number.
(an even *or* an odd *or* a prime)

(b) The side length of a rhombus is x and its perimeter is P , then the mathematical relation between P and x is : P = ………
($4x$ *or* $x + 4$ *or* $x - 4$ *or* $x + 4$)

(c) The number of axes of symmetry of equilateral triangle = ………
(0 *or* 1 *or* 2 *or* 3)

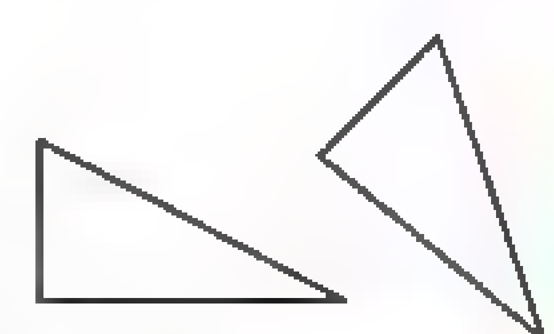
(d) 1 , 4 , 9 , 16 , ……… (in the same pattern) (23 *or* 24 *or* 25 *or* 30)



2 ***Complete the following :***

(a) If : X = $\{x : x \in \mathbb{N} , 1 \le x < 6\}$, then X = ………

(b) The type of the opposite transformation is a ………



(c) The area of a triangle whose base length 5 cm. and the corresponding height 6 cm. is ……… cm^2.

(d) The perimeter of a rectangle is 10 cm. and its width = x cm. , then its length = ……… cm.

3 **(a)** ***In a 2-dimensional coordinate plane :***

Draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of the Δ ABC by reflection in $\overleftrightarrow{BC}$ and find the sum of areas of the triangle and its image.

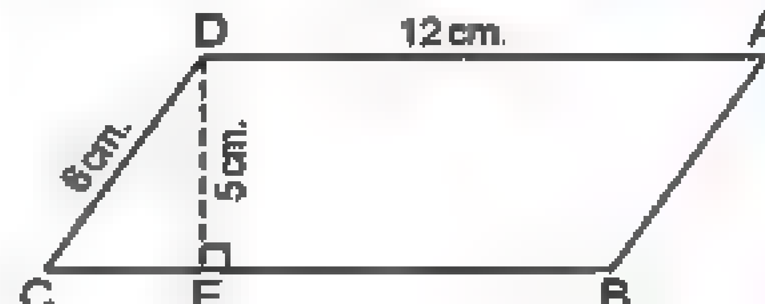
(b) ***By using the properties calculate the value of :***

(1) 123 + 254 + 377 + 246 **(2)** 25 × 125 × 4

4 **(a)** ***In the opposite figure :***

ABCD is a parallelogram where AD = 12 cm. , CD = 6 cm. , DE = 5 cm. and $\overline{DE} \perp \overline{BC}$

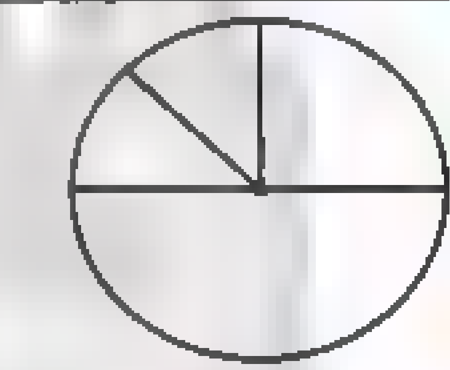
Find the area of the parallelogram , then calculate its height drawn from the point D on $\overleftrightarrow{AB}$



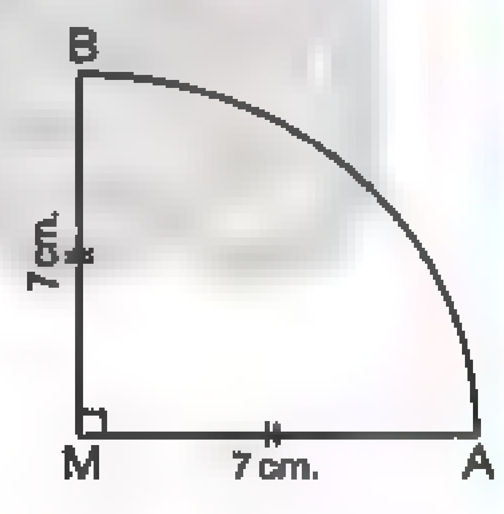
(b) **Solve each of the following equations :**

(1) $\frac{1}{3} x + 8 = 10$ **(2)** $\frac{1}{6} x - 3 = 4$

5 **(a)** An employee spends his monthly salary as follow 1000 pounds for food 500 pounds for clothes 250 for the rent of the flat , 250 other spending. Represent these data on the shown circular sectors.



(b) Find the perimeter of the opposite figure where MA = MB = 7 cm. $(\pi = \frac{22}{7})$





Answer the following questions :

1 ***Choose the correct answer :***

(a) Double the number x subtracted 7 from it equals ....

($x - 7$ *or* $2x - 7$ *or* $7x + 2$ *or* $14x$)

(b) The number of axes of symmetry of the rectangle = ...

(0 *or* 1 *or* 2 *or* 4)





ⓒ If : X = {x : x ∈ ℕ , 5 < x < 6} , then X = ...

(∅ or {5 , 6} or {5 , 5} or {5})

ⓓ If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. where $\pi = \frac{22}{7}$ (3.5 or 7 or 22 or 44)

2 ***Complete the following :***

ⓐ For a ∈ ℕ , b ∈ ℕ , then a × b .... ℕ

ⓑ If : A (5 , 2) and B (5 , 6) , then the coordinates of the midpoint of $\overline{AB}$ are (.......... , ...)

ⓒ The least number in the set of counting numbers is ....

ⓓ If we multiply the number L by 5 , then we subtract from the result 6 , then we shall get the number ....

3 ⓐ Mina bought 3 notebooks , where the price of each is L.E. x . He gave the seller L.E. 20 and he still has L.E. 5 write an equation to represent this information and find x

ⓑ ***By using the properties of operation in ℕ find the result of :***

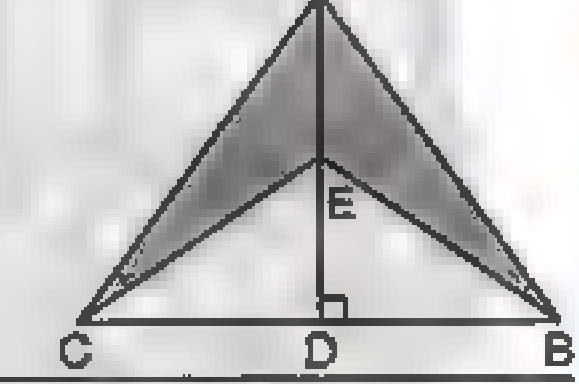
(1) 25 × 98 × 4 (2) 642 + 173 + 358 + 27

4 ⓐ ***The area of a parallelogram = 48 cm². and its base = 8 cm. what is its height ?***

ⓑ ***In the opposite figure :***

$\overline{AD} \perp \overline{BC}$, E is the midpoint of $\overline{AD}$, CB = 6 cm. , AD = 8 cm.

Find the area of the shaded port.



5 ⓐ In 2-dimensional coordinate plane locate the points A (3 , 0) , B (5 , 0) , C (0 , 5) and D (0 , 3) Find the area of the shape ABCD

ⓑ ***The following is a frequency distribution for the working hours of 50 workers. Graph these data using the frequency polygon :***

Sets	2 –	4 –	6 –	8 –	10 –	Total
Frequency	8	9	15	16	2	50



Answer the following questions :

1 ***Choose the correct answer :***

ⓐ (5 – 7) .... ℕ (∈ or ∉ or ⊂ or ⊄)

(b) The number of axes of symmetry of the parallelogram = ……

(zero or 1 or 2 or 3)

(c) Twice the number x subtracted 3 from it = ……

($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

(d) The set of even number (E) ∩ the set of prime number (P) = ……

(P or O or ℕ or {2})

2 ***Complete the following :***

(a) 1 , 4 , 8 , 13 , …… , …… in the same pattern.

(b) Shorouk saved x pounds , her father gave her 10 pounds , then she has …… ……

(c) The type of the opposite transformation is ……



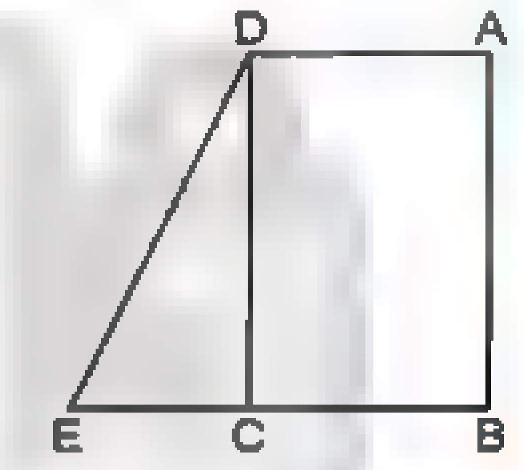


(d) The square whose diagonal length is 8 cm. its area = …… cm^2

3 **(a)** ***In the opposite figure :***

ABCD is a rectangle of area 828 cm^2. $E \in \overrightarrow{BC}$, AD = 23 cm. , BE = 35 cm.

Find the area of Δ DCE



(b) ***Using the properties of commutation and association find value of each of the following.***

(1) $8 \times 133 \times 125$ **(2)** $27 + 69 + 73$

4 **(a)** ***In the opposite figure :***

Calculate the perimeter of the figure ($\pi = 3.14$)



(b) ***Solve each of the following equation :***

(1) $\frac{1}{3}x + 8 = 9$ **(2)** $2x - 3 = 5$

5 **(a)** Graph the figure ABCD which A (4 , 8) , B (10 , 8) , C (9 , 4) , D (5 , 4) and then draw its line of symmetry.

(b) ***The following table shows the frequency distribution of the number of work hours of 44 works :***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	10	12	6	16	44

Draw the frequency polygon which represent these data.



Answer the following questions :

1 *Choose the correct answer :*

(a) The additive neutral element in $\mathbb{N}$ .... the multiplicative neutral element in $\mathbb{N}$ ($>$ or $<$ or $=$)

(b) The circumference of a circle with diameter length 42 cm. is ...... cm. where $\left(\pi = \frac{22}{7}\right)$ (48 or 96 or 168 or 132)

(c) If : x is an odd number , then $x + 2$ is .... number. (even or odd or prime)

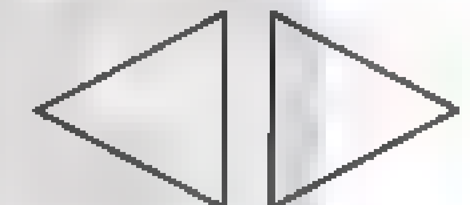
(d) The sum of two natural number .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 *Complete the following :*

(a) The set of even number (E) - the set of odd numbers (O) = ...

(b) Number of axes of symmetry of the rhombus = ...

(c) The opposite geometric transformation is ....



(d) The sum of two numbers is 15 one of them is x , then the other = ...

3 (a) Write by the list method the set $X = \{x : x \in \mathbb{N} , 3 \le x \le 9\}$, then represent its elements on the number line.

(b) Five consecutive odd number , its middle number is $(x + 12)$ write down these numbers.

4 (a) ***Which is greater in area :***

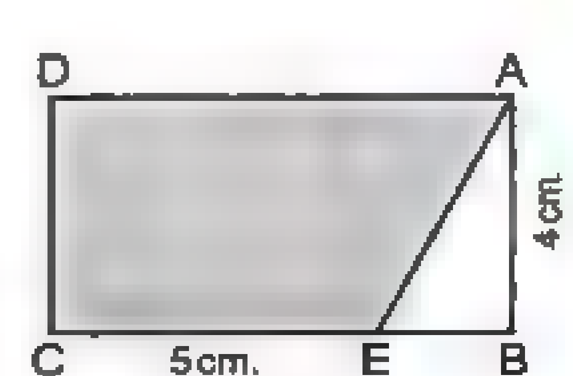
A rhombus in which the lengths of its diagonals are 6 cm. and 8 cm. or a square in which the diagonal length = 7 cm.

(b) ***In the opposite figure :***

ABCD is a rectangle of area is 32 cm^2.

and EC = 5 cm.

Calculate the area of the figure AECD



5 (a) A librarian made an inventory of the books in his library and their types. He found the following : $\frac{1}{4}$ of the books are religious , $\frac{1}{4}$ of the books are literary , $\frac{1}{2}$ of the books are scientific.
Graph that given data using a pie graph. If the total of books was 800 , find the number of each type of books.

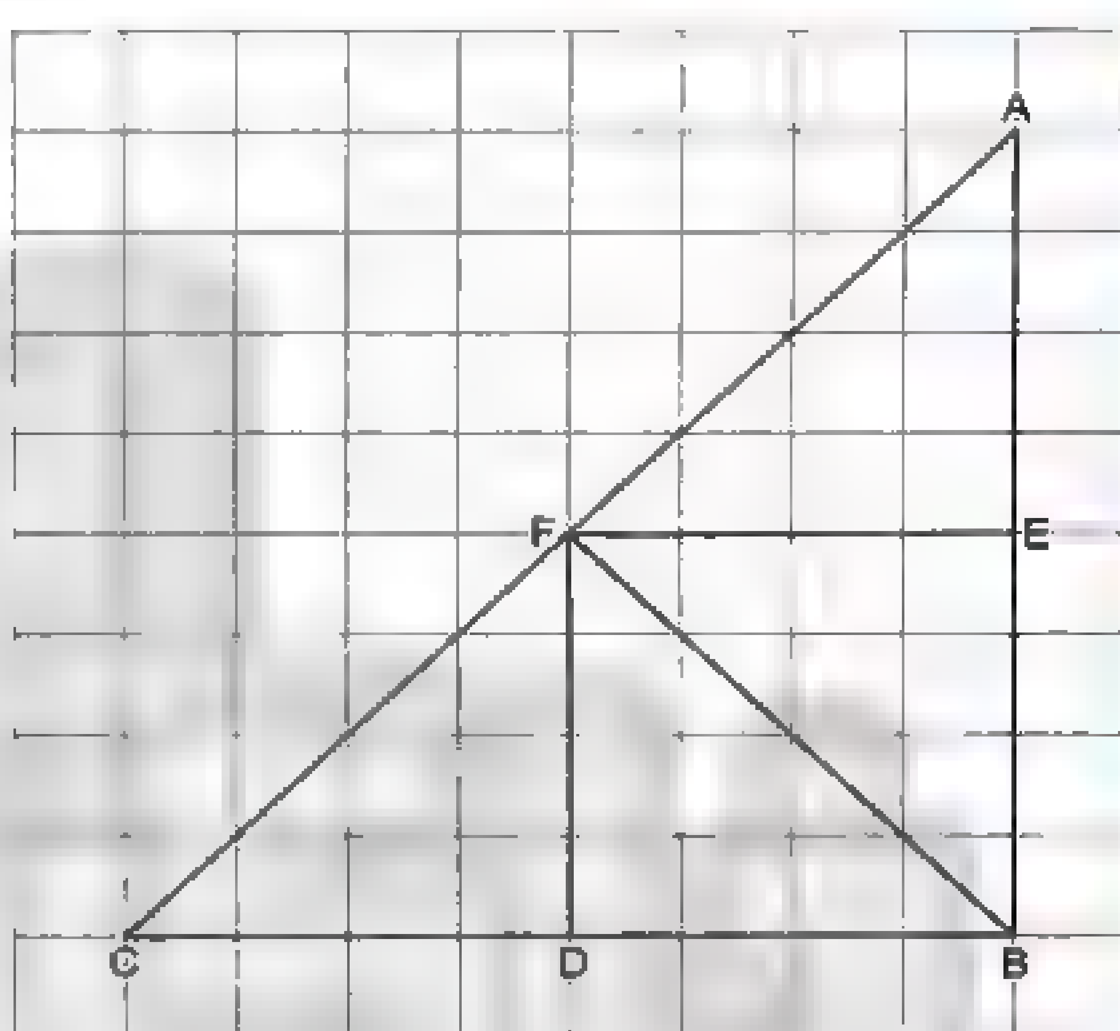
(b) ***In the opposite figure : complete :***

(1) Δ BEF is the image of Δ AEF by reflection across $\overleftrightarrow{\quad}$ ....

(2) Δ BDF is the image of Δ CDF by reflection across $\overleftrightarrow{\quad}$ ....

(3) Δ ABF is the image of Δ CBF by reflection across $\overleftrightarrow{\quad}$ ....

(4) Δ BEF is the image of Δ BDF by reflection across $\overleftrightarrow{\quad}$ ....



Model 8

Answer the following questions :

1 ***Choose the correct answer :***

(a) O .... set of counting number (C) (∈ *or* ∉ *or* ⊂ *or* ⊄)

(b) Mina is x years old , then mina's age 3 years ago was ....
($3x$ *or* $3-x$ *or* $x-3$ *or* $x+3$)

(c) The number of axes of symmetry of the isosceles triangle = ...
(zero *or* 1 *or* 2 *or* 3)

(d) The opposit egeometric transformation is ....
(flip *or* slide *or* turn)

2 ***Complete the following :***

(a) The perimeter of the equilateral triangle whose side length is l cm. = ...

(b) The set of the natural numbers which are move than 4 and less than 5 is ....

(c) 1 , 3 , 9 , 27 , ... (in the same pattern)

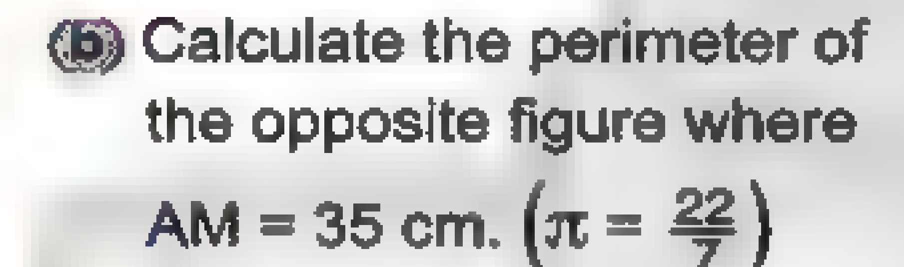
(d) A parallelogram , in which the lengths of two adjacent sides are 5 cm. and 7 cm. , the length of the smaller height = 4 cm. , then its area = ... cm^2

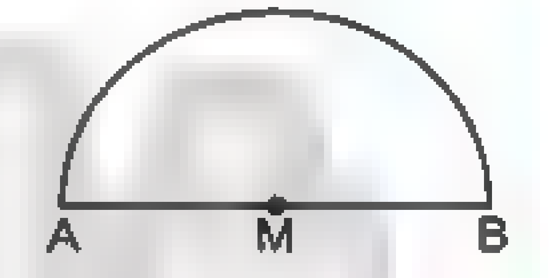
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3 (a) ***In the opposite figure :***

ABCD is a parallelogram ,
where AD = 12 cm.
, CD = 6 cm. , DE = 5 cm. and $\overline{DE} \perp \overline{BC}$
Find the area of the parallelogram.
then calculate its height drawn from point D on $\overleftrightarrow{AB}$

(b) Calculate the perimeter of the opposite figure where AM = 35 cm. $\left(\pi = \frac{22}{7}\right)$





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4 (a) ***Solve the equation :*** $75 = 5x + 7 \times 10$

(b) a , b , c and d are four natural numbers where d > a , b < c , c < d , b < d and b > a Represent these data on a number line.

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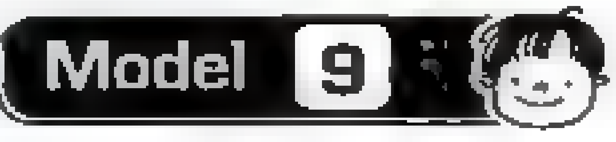
5 (a) Draw on the coordinates plane the triangle ABC where A (1 , 0) , B (2 , 2) and C (2 , 5) , then draw its image by reflection on $\overleftrightarrow{BC}$

(b) ***The following table shows the recorded tempratures in 40 cities on a day :***

Temperatures	20 –	22 –	24 –	26 –	28 –	Total
Number of cities	7	9	11	8	5	40

(1) Find the number of cities with temperatures less than 24 degrees Celsius.

(2) Draw each of the histogram and the frequency polygon.



Answer the following questions :

1 Choose the correct answer :

(a) The number of axes of symmetry of trapezium = ... (0 or 1 or 2 or 4)

(b) The perimeter of rhombus is 20 cm. and its height is 6 cm. , then its area = ... cm^2 (30 or 120 or 24 or 26)

(c) x and y are two numbers where their sum is 10 then y = ... ($10 + x$ or $10 - x$ or $x - 10$ or $10x$)

(d) The multiplicative identity in ℕ is .... (0 or 1 or 2 or 3)

2 Complete the following :

(a) The smallest natural number ....

(b) If : $2x = 10$, then x = ...

(c) 0 + a = a + 0 = ... (........ property)

(d) If : A (3 , 7) and B (5 , 7) , then C (........ , ...) is the midpoint of $\overline{AB}$

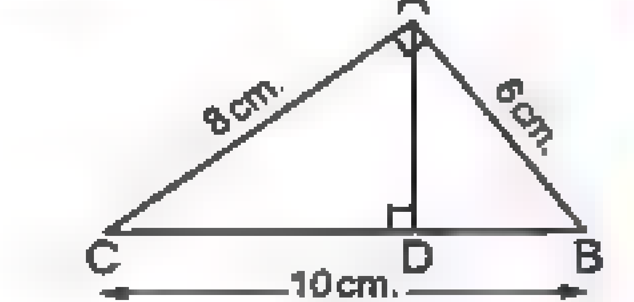
3 (a) Three times of a natural number x is 8 more than the multiplicative neutral. Express this information in an equation and solve it for x

(b) ***By using the properties of operation in ℕ find the result of the following :***

(1) 18×99 (2) 56×1002

(3) $4 \times 49 \times 25$ (4) $156 + 871 + 344 + 129$

4 (a) ***In the opposite figure :***



ABC is a right-angled triangle at A

AB = 6 cm. , AC = 8 cm. , BC = 10 cm.

, $\overline{AD} \perp \overline{BC}$ Find the length of : $\overline{AD}$

(b) ***Which is greater in area ?***

A rhombus in which the lengths of its diagonals are 6 cm. and 8 cm. or a parallelogram in which its base length 4 cm. and its corresponding height 8 cm.

5 (a) In the cartesian coordinates plane , from the following figure. Find the image of the square by reflection on the straight line L where A (5 , 2) , B (7 , 4) , C (9 , 2) , D (7 , 0)

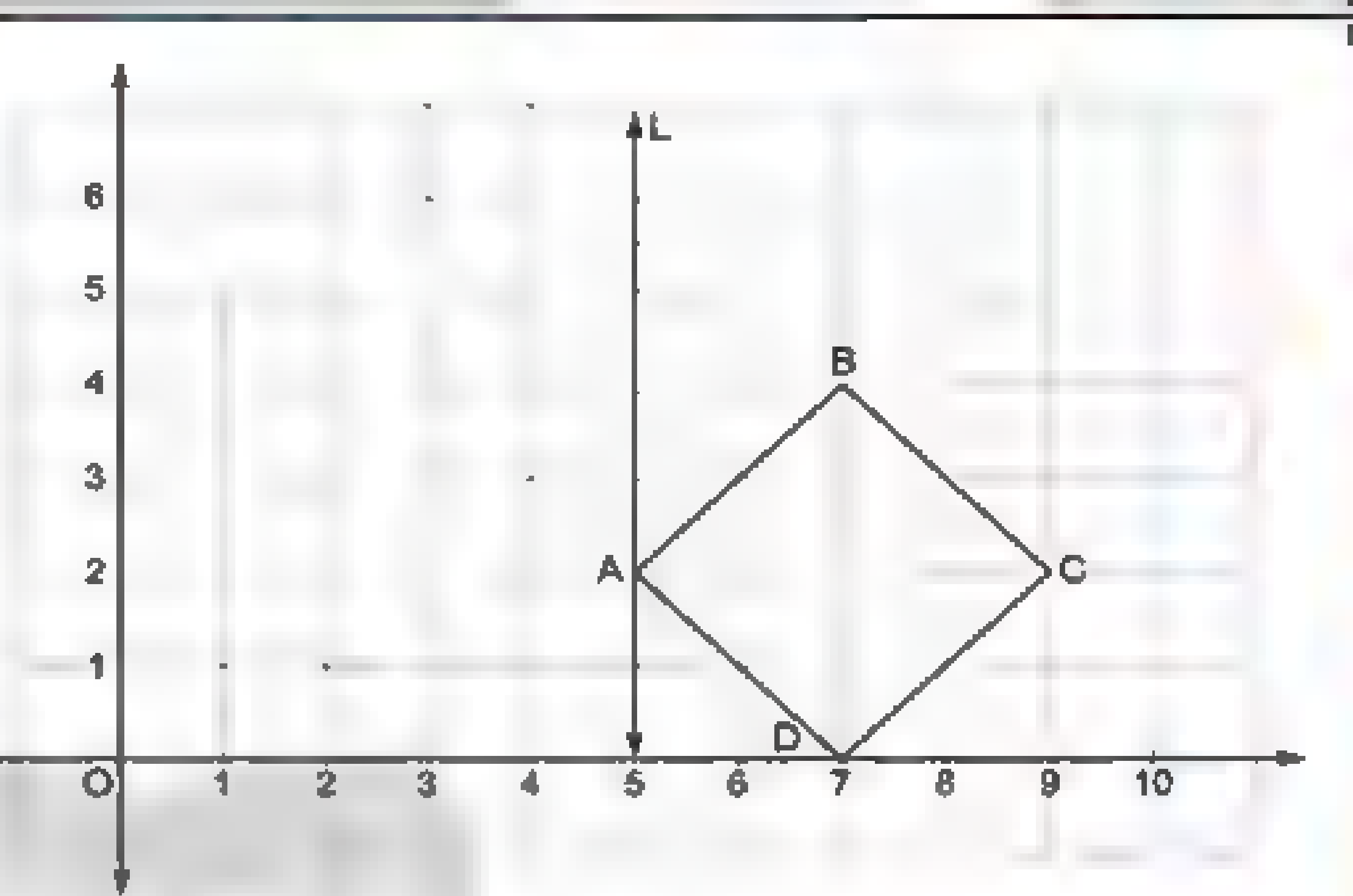
Then find :

(1) The image of A by reflection in the straight line L.

(2) The image of B by reflection in the straight line L.

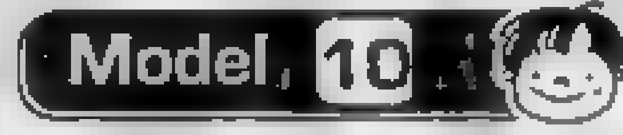
(3) The image of C by reflection in the straight line L.

(4) The image of D by reflection in the straight line L.



(b) ***Represent this data by a histogram and frequency polygon :***

Sets	0 –	10 –	20 –	30 –
Frequency	40	20	30	10



Answer the following questions :

1 ***Choose the correct answer :***

(a) If O is the set of odd number , then O .... ℕ (∈ *or* ∉ *or* ⊂ *or* ⊄)

(b) The side length of a rhombus is x and its perimeter is P the mathematical relation between P and x is : P = ...

($4x$ *or* $x + 4$ *or* $x - 4$ *or* $x \div 4$)

(c) The number of axes of symmetry of an equilateral triangle = ...

(zero *or* 1 *or* 2 *or* 3)

(d) The type of the opposite transformation is ....

(translation *or* reflection *or* rotation)

2 ***Complete the following :***

(a) If : X = $\{x : x \in ℕ , 1 \leq x < 5\}$, then X = ...

(b) If we subtract 5 from twice the number Z , then we shall get the number ....

(c) The circumference of a circle with diameter length 20 cm. is .... π cm.

(d) If x is an even number , then $(x + 1)$ is .... number.

3 (a) The area of a piece of paper is 312.5 cm^2. If 7 congruent squares with diagonal length of each 9 cm. are cut off. Find the area of the left part of the paper.

(b) Find the radius length of the circle if its circumference is 66 cm. $(\pi = \frac{22}{7})$

4 (a) ***Use operation properties in $\mathbb{N}$ to calculate.***

(1) $25 \times 9892 \times 4$ (2) $862 + 199 + 138 + 801$

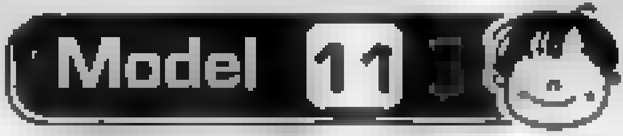
(b) ***Solve :*** $2x + 3 = 15$, $x \in \mathbb{N}$

5 (a) ***In a coordinate plane. Represent the points :***

A (2 , 3) , B (3 , 5) and C (5 , 3) , then find the image of Δ ABC by reflection in $\overleftrightarrow{AC}$

(b) ***The following table shows the number of students who practice sports. Represent these data using pie graph :***

Game	Football	Basketball	Volleyball
Number	20	10	10



Answer the following questions :

1 ***Choose the correct answer :***

(a) $\frac{2}{5-5}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(b) The smallest natural number is .... (0 or $\frac{1}{2}$ or $\frac{1}{9}$ or 1)

(c) The type of the opposite transformation is ....

(rotation or translatation or reflection)

(d) The circumference of a circle = ...

($2\pi d$ or πr or $4\pi r$ or $2\pi r$)

2 ***Complete the following :***

(a) $20 - x = 17$, then x = ...

(b) .... , ... , 12 , 24 , 48 (in the same pattern)

(c) The lengths of two adjacent sides of a parallelogram are x and y , then its perimeter = ...

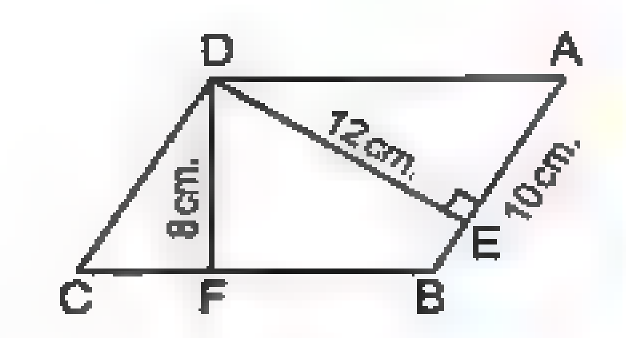
(d) If : A (2 , 7) and B (2 , 3) , then the coordinates of the midpoint of $\overline{AB}$ are (.......... , ...)



3 (a) Five even natural numbers , the greatest number is $x + 13$, write down these number.

(b) ***In the opposite figure :***

ABCD is a parallelogram in which
AB = 10 cm. , DE = 12 cm.
, DF = 8 cm. find : the length of $\overline{BC}$



4 (a) ***Solve the following equations :***

(1) $3x + 5 = 26$ $\qquad x \in \mathbb{N}$

(2) $\frac{1}{5} x - 2 = 10$ $\qquad x \in \mathbb{N}$

(b) If the area of triangle = 6 cm^2 and the length of the base = 3 cm. Find its corresponding height.

5 (a) ***In the orthogonal cartesian coordinates locate the points A (8 , 2) , B (3 , 2) , C (3 , 6) and D (8 , 6) , then complete :***

(1) The length of $\overline{AB}$ = ········ unit.

(2) The length of $\overline{BC}$ = ········ unit.

(3) The figure ABCD is ········

(4) The perimeter of the figure ABCD = ········ unit.

(b) ***Using the following table of data to make the histogram :***

Sets	5 –	7 –	9 –	11 –
Frequency	4	12	9	1



Model 12

Answer the following questions :

1 ***Choose the correct answer :***

(a) an odd number + an even number = ········ number.
(odd *or* even *or* prime)

(b) The number of axes of symmetry of the square = ········
(0 *or* 2 *or* 3 *or* 4)

(c) The area of a rhombus whose diagonals lengths are 4 cm. and 10 cm. is ········ cm^2.
(40 *or* 80 *or* 20 *or* 10)

(d) The value of x when $x + 1 = 3$ ········ the value of x when $2x = 6$
(> *or* = *or* <)

2 ***Complete the following :***

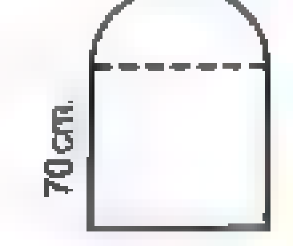
(a) The multiplicative identity element in ℕ is ....

(b) The perimeter of a rectangle is 20 cm. If its length is x cm. , then its width = ... cm.

(c) If : A (4 , 5) and C (4 , 12) then the length of $\overline{AC}$ = ... length unit.

(d) E ∩ P = ... where E is the set of even numbers and P is the set of prime numbers.

3 ***In the opposite figure :***



There is a window which has the form of a square whose side length is 70 cm. and above it , there is a semicircle calculate.

(a) The perimeter of the window.

(b) If the area of the window is 6825 cm^2. , then find the area of the semicircle.

4 (a) ***Use the properties of addition to find the value of :*** 38 + 47 + 62 + 53

(b) ***Solve the following equation :*** $x + 45 = 75$ (where $x \in$ ℕ)

5 (a) ***In coordinate plane :***

Draw the triangle ABC where A (1 , 3) , B (4 , 1) , C (4 , 7) , then draw the image of triangle ABC by reflection in $\overleftrightarrow{BC}$

(b) ***Represent the following distribution by frequency polygon :***

Sets	0 –	4 –	8 –	12 –	16 –
Frequency	6	10	12	5	3

Model 13

Answer the following questions :

1 ***Choose the correct answer :***

(a) $\{\frac{1}{2}, 1, 2\}$ .... ℕ (∈ or ∉ or ⊂ or ⊄)

(b) Double the number x subtracted 7 from it equals ....

($x-7$ or $2x-7$ or $7x+2$ or $14x$)

(c) The number of axes of symmetry of parallelogram = ...

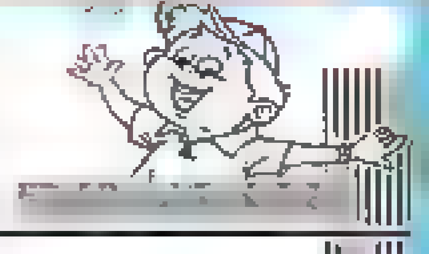
(0 or 1 or 2 or 4)

(d) 39 × 115 = 39 × 100 + 39 × ...... (115 or 10 or 5 or 15)

2 ***Complete the following :***

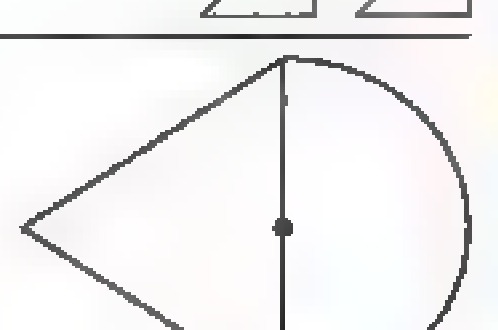
(a) 3 , 9 , 27 , ... , ... (in the same pattern)

(b) The sum of two numbers is 35 , one of them is x , then the other is ......



(c) The area of the rhombus whose side length = 10 cm. and its height is 9.6 cm. = ... cm^2

(d) The opposite geometric transformation is ......



3 (a) The opposite figure is made up of an equilateral triangle of side length 7 cm. and a semicircle find its perimeter. $(\pi = \frac{22}{7})$

(b) A parallelogram has a base length of 8 cm. and a corresponding height of 5 cm. Find its area.

---

4 (a) ***Use the distribution property to find the value of :***

(1) 519 × 99 (2) 316 × 1001

(b) ***Solve each of the following equation :***

(1) $\frac{1}{5} x - 1 = 10$ (2) $5x + 1 = 16$

---

5 (a) On coordinate plane draw the rectangle ABCD where A (0 , 1) , B (3 , 1) , C (3 , 5) and D (0 , 5) , then draw its image by reflection in $\overleftrightarrow{BC}$

(b) ***The following table shows the marks of 40 pupils in mathematics exam :***

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	5	7	12	A	7	40

(1) Find the value of A

(2) Draw the frequency histogram and the frequency polygon which represent these data.

Model 14

Answer the following questions :

1 ***Choose the correct answer :***

(a) ℕ – C = ... ({1} or {0} or ℕ or ∅)

(b) The difference between two numbers is 5 , the smaller one is y , then the greater number is ......

(5 y or 5 – y or y – 5 or y + 5)

(c) The number of axes of symmetry of a scalene triangle = ...

(0 or 1 or 2 or 3)

(d) $\left(\frac{1}{2} + 1\frac{1}{2}\right)$ .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 ***Complete the following :***

(a) If : (4 , a) = (2 b , 6) , then a = ... , b = ...

(b) If : 15 – x = 9 , then x = ...

(c) $\frac{\text{The circumfereuce of the circle}}{\text{The length of its diameter}}$ = ...

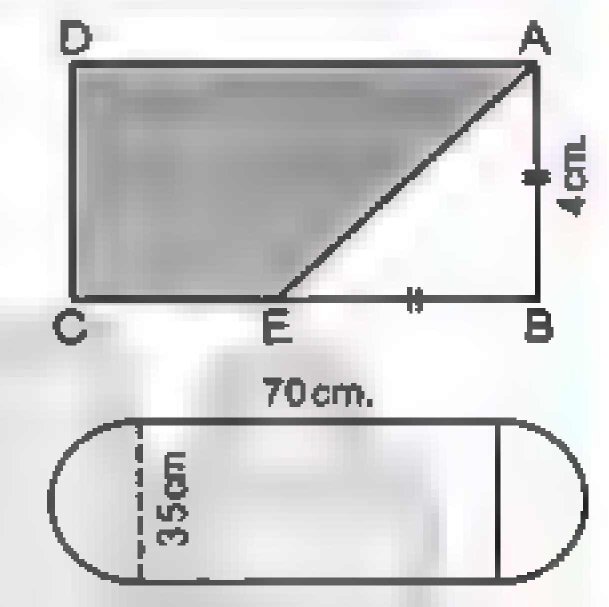
(d) If : 86 × 15 = 86 × x + 86 × 10 , then x = ...

3 (a) ***Using the properties of operations in ℕ to find the result of the following (write the used property)***

(1) 612 + 154 + 88 + 846 (2) 125 × 19 × 8

(b) ***Solve the equation :*** 2 x – 4 = 8 where $x \in \mathbb{N}$

4 (a) ***In the opposite figure :***

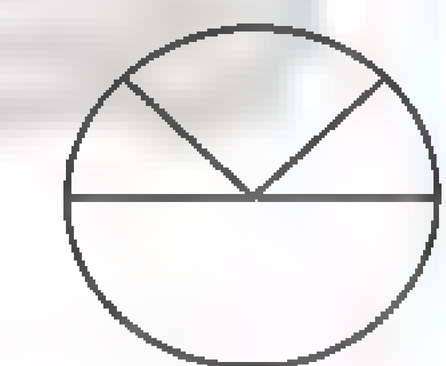


ABCD is a rectangle its area = 32 cm²

, AB = BE = 4 cm.

Find the area of the shaded part

(b) Find the perimeter of the opposite figure $\left(\pi = \frac{22}{7}\right)$



5 (a) In coordinate plane draw the figure ABCD in which A (4 , 5) , B (1 , 1) , C (4 , 1) and D (7 , 5)

(1) What is the name of the figure ABCD and calculate its area.

(2) Draw the image of the figure ABCD by reflection in $\overleftrightarrow{CA}$

(b) ***An employee spends his salary as follows :***

L.E. 200 for clothes.

L.E. 800 for food.

L.E. 400 for transportation and medicine.

L.E. 200 for renting an apartment.

Graph that data on the opposite circle.

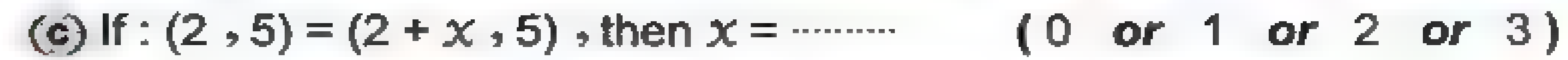
Model 15

Answer the following questions :

1 ***Choose the correct answer :***

(a) The set of even numbers (E) ∪ the set of odd numbers (O) = ... (P *or* O *or* E *or* ℕ)

(b) If : 6 x = 66 , then x = ... (6 *or* 11 *or* 6.6 *or* 60)



(c) If : (2 , 5) = (2 + x , 5) , then x = ... (0 or 1 or 2 or 3)

(d) (x – 10) .... (x – 9) where x is a natural number more than 12 (> or < or = or ≥)

2 ***Complete the following :***

(a) The additive identity in $\mathbb{N}$ is .... but the multiplicative identity is ....

(b) If we add 2 to three times the number y , then we shall get the number ....

(c) The coordinates of the midpoint of a line segment which its end points are (6 , 8) and (4 , 8) are ....

(d) The square whose area is 24.5 cm^2 the length of its diagonal = ... cm.

3 (a) ***Write a real life situation that can be represented by the equation $x + 5 = 12$, then solve for x***

(b) Find by using the properties of oddation and multiplication the result of : 99 × 15

4 (a) ***Which is greater in area :***

a garden of a shape of a triangle with base 8 m. and corresponding height 7 m. or a land in a shape of a rhombus of side length 5 m. and its height 10 m.

(b) If the circumference of a circle = 88 cm. Find the length of its diameter.

5 (a) On coordinate draw Δ ABC where A (0 , 3) , B (2 , 0) , C (2 , 5) , then draw its image by reflection in $\overleftrightarrow{BC}$

(b) ***The following frequency distribution shows the marks of a group of students in an exam :***

Sets	5 –	10 –	15 –	20 –	25 –	30 –	35 –	Total
Number of students	3	6	8	12	10	6	5	50

(1) What is the number of students who got 30 marks or more.

(2) Draw the frequency polygon for that distribution.



Answer the following questions :

1 ***Choose the correct answer :***

(a) (x + 15) .... (x + 17) , $x \in \mathbb{N}$ (> or < or = or ≥)

(b) Sarah saved L.E. x and her father gave her L.E. 5 she will have ......
($5x$ or $x+5$ or $x-5$ or $\frac{x}{5}$)

(c) If : A (2 , 3) , B (2 , 5) , then the length of $\overline{AB}$ = ... length unit.
(3 or 5 or 2 or 1)

(d) If the set of even numbers is E , then E ...... $\mathbb{N}$
($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 ***Complete the following :***

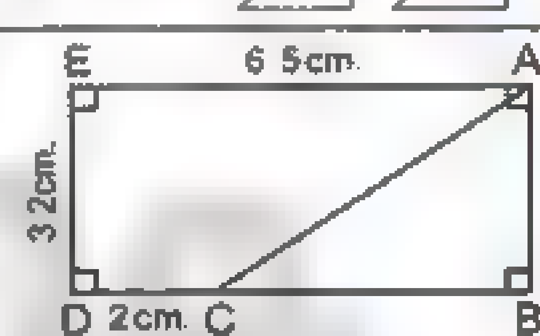
(a) If : X = $\{x : x \in \mathbb{N} , 1 \leq x < 5\}$, then X = { ...... }

(b) If : $3x = 15$, $x \in \mathbb{N}$, then x = ...

(c) The area of the rhombus whose side length = 10 cm. and its height is 9.6 cm. equals ...... cm^2.

(d) The type of the opposite geometric transformation is ......

3 (a) ***In the opposite figure :***



ABDE is a rectangle , C $\in \overline{BD}$
Find the area of $\triangle$ ABC

(b) Find the area of a rhombus with diagonal length 7 cm. and 9 cm. and if its height is 5 cm. Find its side length.

4 (a) ***Use the properties to find the value of :*** 48 + 637 + 52 + 363

(b) ***Solve the equation :*** $\frac{1}{3}x - 1 = 3$, $x \in \mathbb{N}$

5 (a) ***On the coordinate plane :*** Draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of triangle ABC by reflection in $\overleftrightarrow{BC}$.

(b) ***The following table shows the recorded temperatures in 40 cities on a day :***

Temperatures	20 –	22 –	24 –	26 –	28 –	Total
Number of cities	7	9	11	8	5	40

Required :

(1) The number of cities with temperatures less than 24 degrees Celsius.

(2) Draw each of the histogram and the frequency polygon.



Answer the following questions :

1 ***Choose the correct answer :***

(a) The least prime number × any prime number = ... number.
(odd or even or prime)

(b) The number of axes of symmetry of the parallelogram = ...
(zero or 1 or 2 or 4)

(c) Subtracting 3 from double of the number x = ...
($x - 3$ or $2x - 3$ or $3x + 2$ or $5x$)

(d) $(4 \times \cdots\cdots) \times 78 = 7800$ (5 or 25 or 50 or 125)

2 ***Complete the following :***

(a) If : $945 = (x \times 100) + 45$, then x = ...

(b) If : $\left(\frac{1}{2}x , 3\right) = (2 , y)$, then x = ... , y = ...

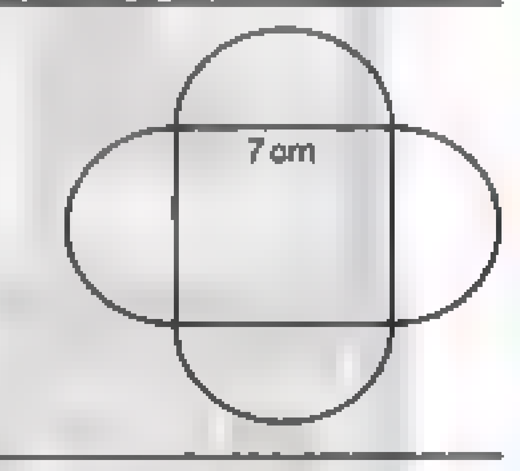
(c) A rhombus of area 48 cm^2 , its height = 4.8 cm.
, then its perimeter = ... cm.

(d) The lengths of two adjacent sides of a parallelogram are x and y ,
then its perimeter = ...

3 (a) Write by the list method the set $X = \{x : x \in \mathbb{N} , 2 \leq x < 7\}$
, then represent its elements on the number line.

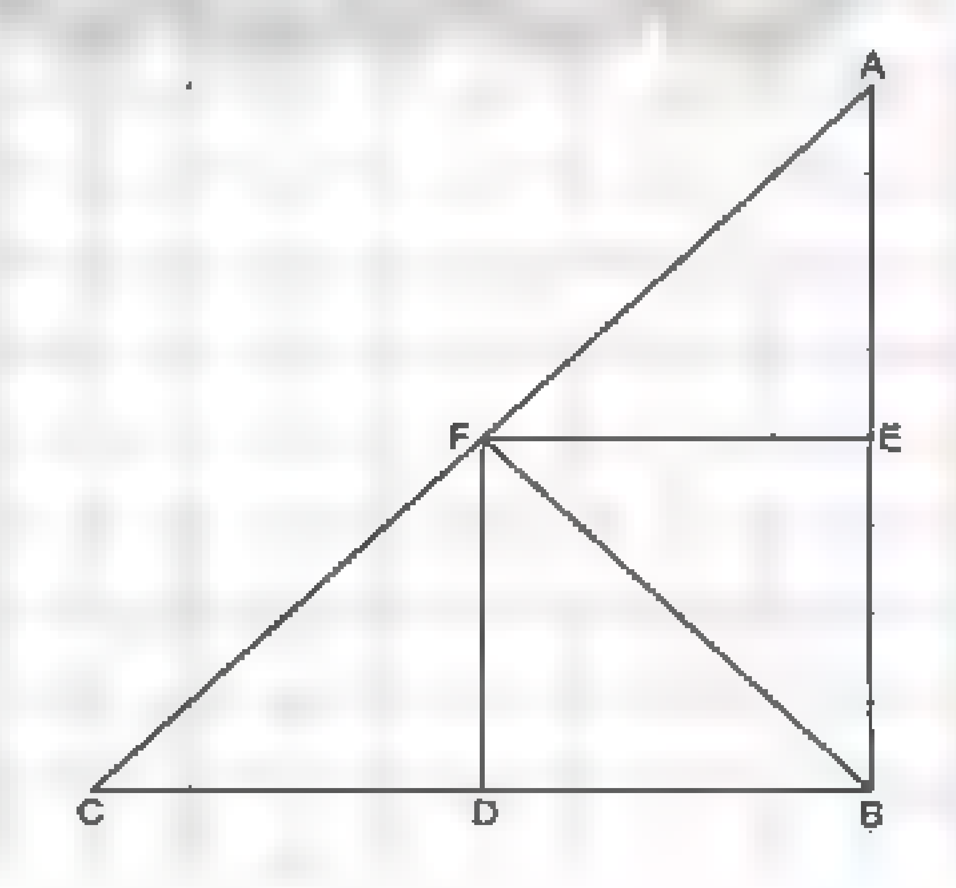
(b) ***Solve the equation :*** $2x + 5 = 17$, $x \in \mathbb{N}$

4 (a) Find the perimeter of the opposite figure.



(b) Find to the nearest hundredth the area of a parallelogram whose base length is 34.75 cm. and its corresponding height 28.17 cm.

5 (a) ***In the opposite figure complete :***



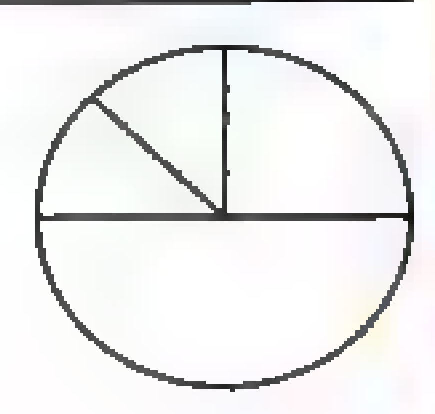
(1) Δ BEF is the image of Δ AEF by reflection across $\overleftrightarrow{\cdots\cdots}$

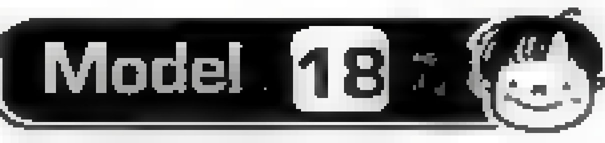
(2) Δ BDF is the image of Δ CDF by reflection across $\overleftrightarrow{\cdots\cdots}$

(3) Δ ABF is the image of Δ CBF by reflection across $\overleftrightarrow{\cdots\cdots}$

(4) Δ BEF is the image of Δ BDF by reflection across $\overleftrightarrow{\cdots\cdots}$

ⓑ An employee spends his monthly salary as follow 1000 pounds for food. , 500 pounds for clothes , 250 the rent of the flat and 250 other spending. Represent these data on the shown circular sectors.





Model 18

Answer the following questions :

1 ***Choose the correct answer :***

ⓐ (0.3 + 2.7) .... ℕ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

ⓑ If : (3 , x – 2) = (3 , 7) , then x = ... (7 or 9 or 5 or 3)

ⓒ If : x + 2 = 5 , $x \in$ ℕ , then x = ... (2 or 3 or 5 or 4)

ⓓ ℕ – E = ... (ℕ or O or E or P)

2 ***Complete the following :***

ⓐ The multiplicative neutral element in natural numbers plus 9 = ...

ⓑ If : 15 × 34 = (5 + 10) × x , then x = ...

ⓒ The number of axes of symmetry of square = ...

ⓓ The length of the base of a triangle whose area is 240 cm^2 and its height = 10 cm is ....

3 ***In the opposite figure :***

ABCD is a parallelogram in which AD = 24 cm. , E is the midpoint of $\overline{AD}$, BF = 15 cm. , the area of Δ ABE = 60 cm^2.

Find :

(1) The area of the parallelogram ABCD

(2) The length of $\overline{AB}$

(3) The perimeter of the parallelogram ABCD



4 ⓐ Using the properties of operations in ℕ to find the result of each of the following.

(1) (64 + 135 + 36 + 65) × 17 **(2)** 84 (25 × 4 + 125 × 8)

ⓑ ***Solve the equation :*** 3 x + 8 = 29

5 ⓐ In a coordinate plane. Represent the points A (2 , 3) , B (3 , 5) and C (5 , 3) , then find the image of Δ ABC by reflection in $\overleftrightarrow{AC}$

(b) ***A librarian made an inventory of the books in his library and their types. He found the following :*** $\frac{1}{4}$ of the books are religious, $\frac{1}{4}$ of the books are literary, $\frac{1}{2}$ of the books are scientific.
Graph that given data using a pie graph. If the total of books was 800 Find the number of each type of books.



Answer the following questions :

1 *Choose the correct answer :*

(a) {2, 7} .... ℕ. (∈ *or* ∉ *or* ⊂ *or* ⊄)

(b) The area of the largest rectangle whose perimeter is 24 cm. = ... cm^2. (32 *or* 36 *or* 72 *or* 144)

(c) If the side length of a rhombus is x, its perimeter is P, the mathematical relation between x and P is x = ... (4 P *or* P + 4 *or* P ÷ 4 *or* P − 4)

(d) The type of the opposite transformation is .... (translation *or* reflection *or* rotation)

2 *Complete the following :*

(a) The smallest natural number is ....

(b) Odd number + even number = ... number.

(c) If : (4, 7) = (2 a, b − 1), then a = ..., b = ...

(d) If : $(x + 2) \times 15 = 8 \times 15$, then x = ...

3

(a) The lengths of the diagonals of a rhombus are 12 cm. and 16 cm. and its height is 9.6 cm. Find its side length.

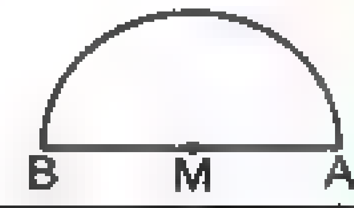
(b) Use the properties of operations in ℕ to find the value of.

(1) 25 × 38 × 4 (2) 44 + 66 + 56 + 34

4

(a) Zahraa saved 14 pounds, she bought 3 notebooks of x pound for each. The remainder with her was 8 pounds. Express these situations by an equation.

(b) Calculate the perimeter of the opposite figure where AM = 35 cm. $\left(\pi = \frac{22}{7}\right)$



5

(a) ***On the coordinate plane :***
Graph the points (4, 3), (4, 9), (7, 9) and (7, 3) join them in the same order and name the figure you obtained.

(b) ***Represent the following distrbution by frequency polygon :***

Sets	0 –	2 –	4 –	6 –	8 –
Frequency	3	7	8	9	2



Answer the following questions :

1 ***Choose the correct answer :***

(a) The number of axes of symmetry of square = ... (0 or 1 or 2 or 4)

(b) If : $x + 3 = 5$, $x \in \mathbb{N}$, then $x =$ .... (1 or 2 or 3 or 4)

(c) If we multiply the number x by 7 , then we subtract from the result 3 we shall get .... ($7x + 3$ or $3x + 7$ or $7x - 3$ or $x - 21$)

(d) 1 , 4 , 9 , 16 , ... (23 or 24 or 25 or 20)

2 ***Complete the following :***

(a) The circumference of a circle with radius lengths 10 cm. is .... π cm.

(b) If : $x = \{x : x \in \mathbb{N} , 2 \le x < 7\}$, then $x = \{ .... \}$

(c) The least natural number is ....

(d) The type of the opposite transformation is ....

3 (a) ***Use the properties of addition to find the value of :***

38 + 47 + 62 + 53

(b) ***Which is greater in area ?***

Triangle whose base length 18 cm. and its height 12 cm. or rhombus with diagonals lengths 24 cm. and 8 cm.

4 (a) Find the radius length of circle which its circumference = 88 cm. $\left(\pi = \frac{22}{7}\right)$

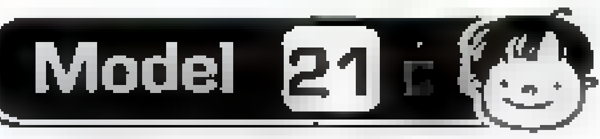
(b) ***Solve the equation :*** $3x + 5 = 26$

5 (a) ***In coordinate plane :***

Draw the triangle ABC where A (1 , 3) , B (4 , 1) , C (4 , 7) , then draw the image of triangle ABC by reflection in $\overleftrightarrow{BC}$

(b) ***The following table represents the marks of pupils in maths test , represent these data by a frequency polygon.***

Sets	5 –	10 –	15 –	20 –	25 –
Frequency	5	10	17	7	2



Answer the following questions :

1 ***Choose the correct answer :***

(a) {2 , 3 , 0.3} .... ℕ (⊂ or ∈ or ⊄ or ∉)

(b) ℕ – E = ... (E or O or P or ℕ)

(c) The number of axes of symmetry of the rectangle = ... (0 or 1 or 2 or 4)

(d) If : $x - 3 = 7$, $x \in$ ℕ , then x = ... (4 or 3 or 10 or 21)

2 ***Complete the following :***

(a) The width of a rectangle is x cm. its length is longer than twice its width by 3 cm. , then the length of the rectangle is .... cm.

(b) The number 5 lies on the right of the number .... directly and on the left of the number ....

(c) The area of a rhombus whose diagonals are 6 cm. and 8 cm. is .... cm^2

(d) If : A (5 , 7) and B (3 , 7) , then C (......... , ...) is the midpoint of $\overline{AB}$

3 (a) The opposite figure shows a football playground.
Find the distance around the figure when $\pi = \frac{22}{7}$



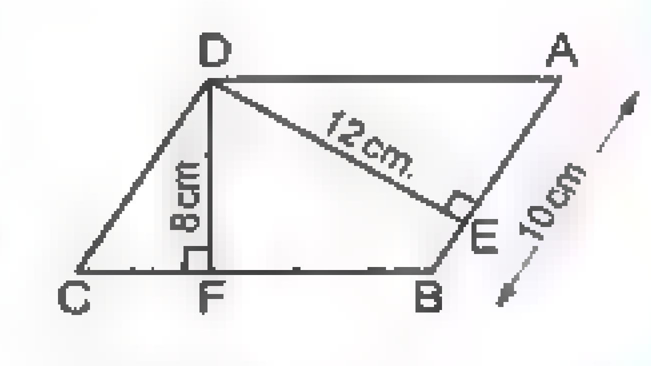
(b) ***Use operations propertes in ℕ to calculate :*** 25 × 781 × 4

4 (a) ***Solve these equations :***

(1) k – 72 = 72 (2) 6 n = 48

(b) ***In the opposite figure :***

ABCD is a parallelogram in which
AB = 10 cm. , DE = 12 cm. , DF = 8 cm.
Find : (1) The area of the parallelogram ABCD
(2) The length of $\overline{BC}$



5 (a) ***In the two dimensions cartesion coordinates :***

Determine the points A (2 , 5) , B (5 , 2) and C (5 , 8) , then find the length of $\overline{BC}$ by measuring.

(b) ***The following table shows the marks of 40 pupils in mathematics exam.***

(1) Find the value of A.

(2) Draw the frequency histogram and frequency polygon which represent these data.

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	6	5	12	A	9	40



Model 22

Answer the following questions :

1 ***Choose the correct answer :***

(a) (5 – 7) .... $\mathbb{N}$ ($\in$ **or** $\notin$ **or** $\subset$ **or** $\not\subset$)

(b) The least prime number × any prime number = ... number. (odd **or** even **or** prime **or** otherwise)

(c) Twice the number y subtracted from it 4 the symbolic expression for this situation is .... (y – 4 **or** 2 y – 4 **or** y + 4 **or** 2 y + 4)

(d) The type of the opposite transformation is .... (rotation **or** translation **or** reflection)

2 ***Complete the following :***

(a) If : A (3 , 7) and B (5 , 7) , then AB = ... length unit.

(b) If : x is an odd number , then $x + 2$ is .... number.

(c) The circumference of a circle with diameter 21 cm. is .... $(\pi = \frac{22}{7})$

(d) The perimeter of the equilateral triangle whose side length is l cm. = ...

3 **(a)** ***Using the properties of commutation , distribution and association. Find the value of each of the following :***

(1) 8 × 731 × 125 **(2)** 28 + 59 + 72

(b) ***The age of a man now x years where $x \in \mathbb{N}$ Find :***

(1) The age of the man after 9 years.

(2) The age of the man since 8 years.

4 In 2-dimensional coordinate plane locate the points A (2 , 0) , B (4 , 0) , C (0 , 5) and D (0 , 3). Find the area of the shape ABCD

5 **(a)** If the area of the square = 72 cm². Find the length of its diagonal.

(b) *Represent the following distribution by frequency polygon :*

Sets	0 –	4 –	8 –	12 –	16 –
Frequency	7	3	10	12	4





Model 23

Answer the following questions :

1 *Choose the correct answer :*

(a) The set of even numbers ········ the set of natural numbers.
($\subset$ or $\in$ or $\not\subset$ or $\notin$)

(b) If x is an odd number , then $x + 3$ is ········ number.
(odd or even or prime)

(c) The number of axes of symmetry of the rhombus equals ········
(zero or 1 or 2 or 4)

(d) If : $x = \{x : x \in \mathbb{N} , 2 \leq x < 4\}$, then $x =$ ········
({3} or {2 , 3} or {2 , 3 , 4} or {2})

2 *Complete the following :*

(a) The least number in the set of counting numbers is ········

(b) The sum of two numbers is 20 one of them is x , then the other = ········

(c) If : A (2 , 3) and B (2 , 7) the length of $\overline{AB}$ = ······ length unit.

(d) The area of the square = $\frac{1}{2} \times$ ········

3 (a) *Which is greater in area ?*
The triangle whose base length is 12 cm. and its corresponding height = 8 cm. or the parallelogram in which the length of the base = 10 cm. and its corresponding height = 5 cm.

(b) *Solve the following equation :*
(1) $x + 3 = 17$ $x \in \mathbb{N}$
(2) $2x + 7 = 23$ $x \in \mathbb{N}$

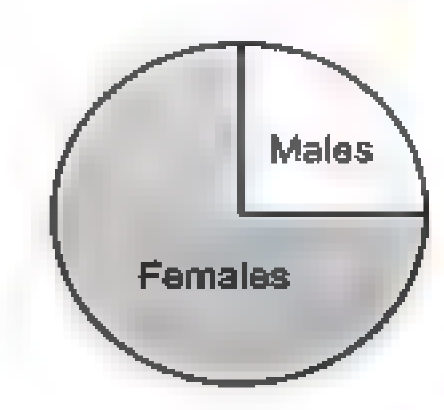
4 (a) *Use the properties of operation in $\mathbb{N}$ to find the result of each (write the used property)*
(1) 156 + 871 + 344 + 129
(2) 27 (25 × 4 + 125 × 8)

(b) A jam jar has form of a cylinder its base is a circle with diameter lengths 7 cm. Find the circumference of its flat base.

5 (a) ***In the coordinate plane :***

Draw the triangle ABC in which A (5 , 5) , B (2 , 5) and C (3 , 7) , then draw the image of triangle ABC by reflection in $\overleftrightarrow{AB}$

(b) 220 candidates have applied for a test to hire male and female anchor persons in the televison. If the opposite pie graph represents the given data ; what is the number of female candidates who applied for that test ?



Model 24

Answer the following questions :

1 ***Choose the correct answer :***

(a) $(x - 10)$ .... $(x - 9)$ where x is a natural number more than 17 (> or < or = or ≥)

(b) The type of the opposite transformation is ....



(reflection or rotation or translation)

(c) The number of axes of symmetry of the parallelogram = ... (0 or 1 or 2 or 4)

(d) If : $x - 3 = 5$, $x \in \mathbb{N}$, then x = ... (8 or 2 or 6 or 7)

2 ***Complete the following :***

(a) If : $945 = (x \times 100) + 45$, then x = ...

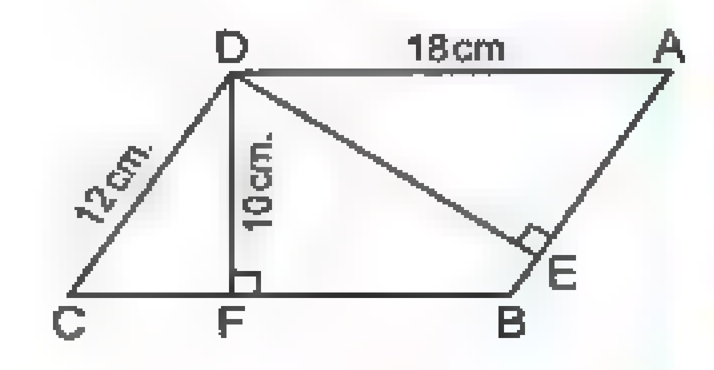
(b) If we subtract 8 from twice the number z , then we shall get the number ....

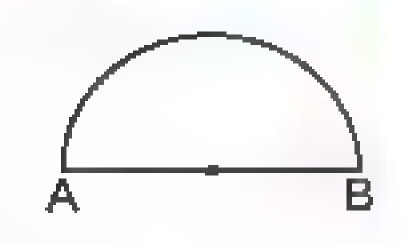
(c) $\frac{\text{The circumference of the circle}}{\text{The length of its diameter}}$ = ...

(d) 1 , 1 , 2 , 3 , 5 , 8 , ... , ... (in the same pattern)

3 (a) ***In the opposite figure :***

ABCD is a parallelogram in which AD = 18 cm. , CD = 12 cm. , $\overline{DF} \perp \overline{BC}$, DF = 10 cm. and $\overline{DE} \perp \overline{AB}$, calculate the length of $\overline{DE}$



(b) ***In the opposite figure :***

The length of the diameter $\overline{AB}$ of a semicircle is 14 cm.

Find the distance around the figure $\left(\pi = \frac{22}{7}\right)$

A B

4 **(a)** ***Use the properties of operations to find the result of :***

(1) 38 + 47 + 62 + 53 **(2)** 8 × 37 × 125

(b) ***Translate each verbal statement into an equations :***

(1) A number if added to 17 the sum is 28

(2) If 9 is subtracted from a number , then the result is 23

5 **(a)** Draw Δ ABC where A (2 , 5) , B (5 , 2) and C (5 , 8) , then find its image by reflection a cross $\overline{BC}$

(b) ***Represent the following distribution by frequency polygon :***

Sets	5 –	7 –	9 –	11 –	13 –
Frequency	4	12	10	7	8



Model 25

Answer the following questions :

1 ***Choose the correct answer :***

(a) If : E is the set of even numbers , then E ...... ℕ

(∈ or ∉ or ⊂ or ⊄)

(b) The multiplicative identity element in ℕ is ......

(0 or 1 or 2 or 4)

(c) The sum of any two natural numbers ...... ℕ

(∈ or ∉ or ⊂ or ⊄)

(d) The number of axes of symmetry of an isosceles triangle = ...

(0 or 1 or 2 or 3)

2 ***Complete the following :***

(a) If : A (2 , 5) and B (4 , 5) , then the midpoint of $\overline{AB}$ is the point (...... , ...)

(b) If : 3 x = 21 , then x = ...

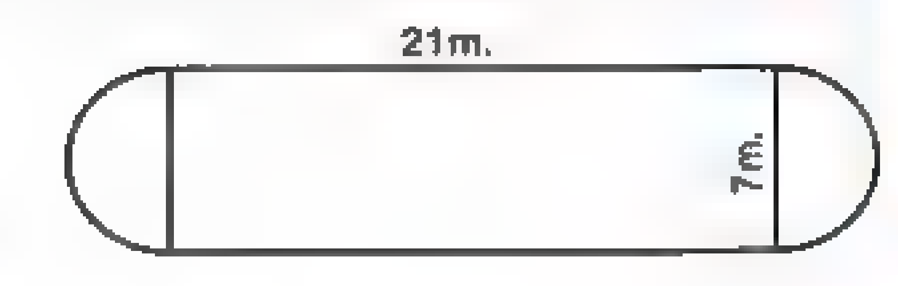
(c) Double the number x subtracted 8 from it equals ......

(d) The square whose area is 32 cm^2, the length of its diagonal = ... cm.

3 (a) ***Use the commutative and associative property to find the value of :*** $4 \times 72 \times 25$

(b) Graph the figure ABCD where A (2 , 8) , B (3 , 4) , C (8 , 4) and D (7 , 8) what is the name of the figure ABCD ?

4 The opposite figure shows a football playground find the distance around the figure when $\left(\pi = \frac{22}{7}\right)$

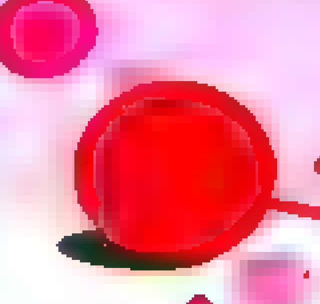


5 (a) ***Solve the equation :*** $\frac{1}{3}x - 2 = 8$

(b) ***The following table shows the number of students who practice sports. Represent these data using pie graph on the opposite figure :***



Game	Football	Basketball	Volleyball
Number	20	10	10



Some Schools' Examinations from Different Governorates



1 Cairo Governorate

Western Cairo Educational Zone
City Language School



Answer the following questions :

1 ***Choose the correct answer :***

[a] If $x + 8 = 15$, $x \in \mathbb{N}$, then $x =$ ....
(3 or 7 or 6 or 5)

[b] The number of axes of symmetry of the rhombus ....
(1 or 2 or 3 or 4)

[c] If $2x = 6$, then $x =$ .... (5 or 1 or 4 or 3)

[d] The area of a triangle whose base length is 10 cm. and the corresponding height is 5 cm. = ... cm^2
(50 or 15 or 25 or 5)

2 ***Complete the following :***

[a] $7 \times 15 = 15 \times a$, then a = ...

[b] The sum of two numbers is 21 one of them x , then the other = ...

[c] The perimeter of the square whose side length is L cm. = ... cm.

[d] The area of the parallelogram = ... × ....

3 [a] Solve the following equation :

$3x - 5 = 10$, $x \in \mathbb{N}$

[b] ***Complete :*** Twice the number x subtracted 8 from it = ...

4 [a] The square whose diagonal length is 6 cm. Find its area.

[b] In the orthogonal Cartesian co-ordinates determine the points A (2 , 5) , B (5 , 2) and C (5 , 8) , then draw its image by reflection in $\overleftrightarrow{BC}$

5 [a] The circle whose diameter length is 14 cm.

Find its circumference. $\left(\pi = \frac{22}{7}\right)$



[b] ***The following table shows the frequency distribution of the number of work hours of 50 worders :***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represent these data.

Additional question

Choose the correct answer :

[a] If $X = \{x : x \in \mathbb{N} , 3 \leq x < 5\}$, then $x =$ ....
({3} or {4} or {3 , 4} or {3 , 4 , 5})

[b] 25 .... $\mathbb{N}$ ($\subset$ or $\not\subset$ or $\notin$ or $\in$)

[c] The smallest natural number is .... (0 or 1 or 2 or 3)

[d] $(8 \times 3) \times 5 =$ .... $\times (3 \times 5)$ (3 or 5 or 8 or 35)

2 Cairo Governorate

Rod El-Farag Educational Zone
St. Mary's School



Answer the following questions :

1 ***Choose the correct answer :***

[a] The number of lines of symmetry of a rectangle is ....
(0 or 2 or 3 or 4)

[b] The area of a rhombus whose diagonals 10 cm. , 20 cm. is .... cm^2
(400 or 300 or 200 or 100)

[c] If the side length of a square is x and its perimeter is P
, then P = ... ($4x$ or $x + 4$ or $x - 4$ or $4 - x$)

[d] The area of a square whose diagonal length 6 cm. is .... cm^2
(18 or 36 or 12 or 24)

2 ***Complete :***

[a] If the diagonal of a circle is 14 cm. , $\pi = \frac{22}{7}$
, then its circumference = ... cm.

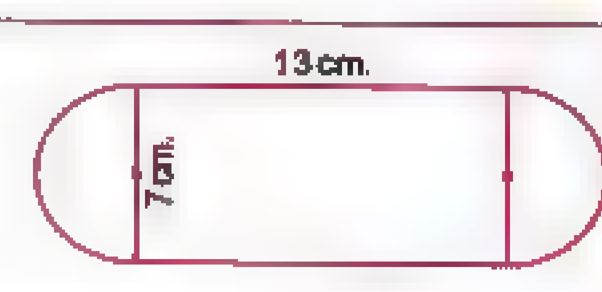
[b] The number of axes of symmetry of the rhombus equals ....

[c] If $x + 3 = 12$, then $x =$ ....

[d] Shorouk saved L.E. y and her father gave her L.E. 12 , then she has L.E. ....

3 [a] ***In the opposite figure :***

Find the perimeter of the figure where $\pi = \frac{22}{7}$



[b] Ahmed has L.E. x , Samir has L.E. 10 and the sum of what Samir has and the twice of what Ahmed has is L.E. 24 Write an equation to represent this situation and find the value of x

4 [a] In square shaped piece of land with diagonal length 28 m., a square shaped house with side length 15 m. has been built on it and the left part was used as a garden. find the area of the garden.

[b] In a 2-dimensional coordinate plan , draw Δ ABC where A (2 , 5) , B (5 , 2) and C (5 , 8) , then find its image by reflection across $\overleftrightarrow{BC}$

5 [a] ***Which is greater in area ?*** A triangle whose base length = 9 cm. and height = 8 cm. or parallelogram in which the length of the base = 8 cm. and its height = 6 cm.

[b] ***The following table shows the daily wages of workers in a company :***

Sets	20 –	30 –	40 –	50 –	60 –	Total
Frequency	8	10	16	12	4	50

Draw the frequency histogram and frequency polygon which represent these data.

Additional question

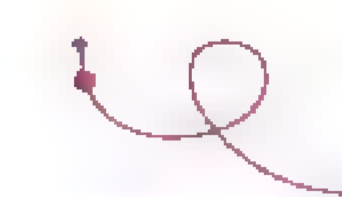
Complete :

[a] The multiplicative neutral element in $\mathbb{N}$ is ....

[b] The sum of two odd numbers is .... number.

[c] 1 , 4 , 8 , 13 , ... , ... (in the same pattern)

[d] 74 × (73 + 27) = 74 × .... = ...




3 Cairo Governorate

El-Zeitoun Educational Zone
El-Ma'aref Modern Lang. School

Answer the following questions :

1 Choose the correct answer :

[a] Subtracting 3 from double of the number x = ...

($x - 3$ or $2x - 3$ or $3x + 2$ or $5x$)

[b] If $x + 3 = 12$, then the value of x = ...

(12 or 4 or 15 or 9)

[c] The area of a square whose diagonal length is 8 cm. = ... cm^2

(64 or 32 or 16 or 8)

[d] Circumference of the circle = ...

(πr^2 or $2\pi r^2$ or $\frac{1}{2}\pi r^2$ or $2\pi r$)

[e] The number of symmetry axes of an equilateral triangle = ...

(0 or 1 or 2 or 3)

2 Complete :

[a] A rhombus of area 48 cm^2 , its height = 4.8 , then its perimeter = ... cm.

[b] If $7 \times 15 = 15 \times x$, then x = ...

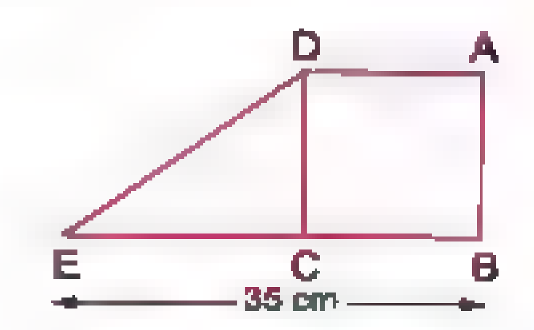
[c] The sum of two numbers is 35, one of them is x , then the other is ....

[d] The square whose perimeter is 32 cm. , its area = ... cm^2

[e] The base length of a triangle is 8 cm. and its height 5 cm. , then its area = ... cm^2

3 [a] ***In the opposite figure :***

ABCD is a square , its perimeter is 60 cm. , $E \in \overline{BC}$ and BE = 35 cm.
Find the area of the figure ABED



[b] ***Solve the equations :***

(1) $3x + 8 = 29$

(2) $\frac{1}{3}x + 8 = 10$

4 [a] ***Which is greater in area ?***

A rhombus in which the lengths of its diagonals 6 cm. , 8 cm.
or a parallelogram whose base length is 7 cm. and height 4 cm.

[b] In the orthogonal Cartesian-coordinates locate the points
A (8 , 2) , B (3 , 2) , C (3 , 6) , D (8 , 6) then complete :

(1) The length of AB = ... units, the length of BC = ... units.

(2) The figure ABCD is ....

(3) The perimeter of the figure ABCD = ... units.

5 ***The following table shows the daily wages of workers in a company :***

Sets	20 –	30 –	40 –	50 –	60 –	Total
Frequency	8	10	16	12	4	50

Draw the frequency histogram and frequency polygon which represent these data.

Additional question

Use the commutative , associative properties to simplify finding the result of :

(1) 98 + 175 + 102 (2) 4 × 175 × 25

4 Cairo Governorate

El-Nozha Directorate of Education
Our Lady of Perpetual Succour School



Answer the following questions :

1 ***Choose the correct answer :***

[a] If $x + 7 = 19$, $x \in \mathbb{N}$, then $x =$ ....

(26 or 12 or 11 or 13)

[b] If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. where $\left(\pi = \frac{22}{7}\right)$

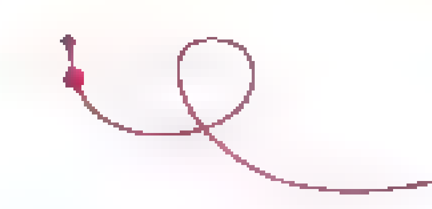
(3.5 or 7 or 22 or 44)

[c] A rhombus in which the lengths of its diagonals are 10 cm., and 12 cm. Its area = ... cm².

(120 or 60 or 24 or 32)

[d] Twice the number x subtracted 7 from it = ...

($7 - x$ or $2x - 7$ or $7x + 2$ or $14x$)



2 ***Complete the following :***

[a] The number of axes of symmetry of the rhombus = ...

[b] If $3x = 15$, $x \in \mathbb{N}$, then $x =$ ....

[c] The length of the diagonal of a square with area 18 cm^2 = ...

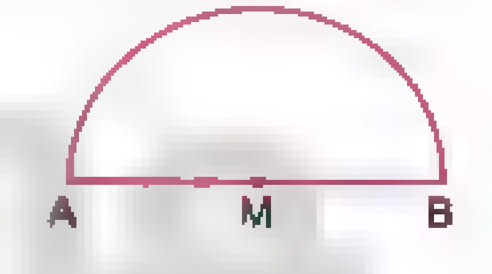
[d] A parallelogram in which the lengths of two adjacent sides are 5 cm. and 7 cm. , the length of the smaller height = 4 cm. , then its area = ... cm^2

3 [a] ***Which is greater in area ?***

A square whose diagonal length is 10 cm. or a right - angled triangle in which the lengths of the sides of the right angle are 8 cm. and 15 cm.

[b] Solve : $2x + 9 = 21$, $x \in \mathbb{N}$

4 [a] ***In the opposite figure :***



The length of the diameter $\overline{AB}$ of a semicircle is 14 cm.

Find the distance around the figure $\left(\pi = \frac{22}{7}\right)$

[b] Draw the triangle ABC where A (2 , 5) , B (5 , 2) and C (5 , 8) , then find its image by reflection across $\overleftrightarrow{BC}$

5 [a] If the area of a rhombus is 30 cm^2 and the length of one of its diagonals is 6 cm. Find the length of the other diagonal.

[b] ***The following table shows the frequency distribution of the number of work hours of 50 workers :***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency histogram which represents these data.

Additional question

Complete :

[a] The set {a : a $\in \mathbb{N}$, a < 4} in the listing method = ...

[b] The property used in : $a \times (b \times c) = (a \times b) \times c$ is ....

[c] The additive neutral element in $\mathbb{N}$ is ....

[d] 1 , 2 , 3 , 5 , 8 , ... , ... (in the same pattern)

5 Cairo Governorate

New Cairo Educational Zone
Akhnaton Egyptian College



Answer the following questions :

1 Complete :

[a] If the long base of parallelogram is 8 cm., short base 5 cm. and its short height is 4 cm. , then its area = ... cm^2

[b] The circumference of circle whose diameter length 7 cm. is .... cm. $\left(\pi = \frac{22}{7}\right)$

[c] The area of rhombus = $\frac{1}{2}$ × .... × ....

[d] If 2 x = 10 , then x = ...

[e] The polygon ABCD ≡ the polygon XYZL , then ∠ A ≡ ∠ ....

2 Choose the correct answer :

[a] If the circumference of a circle is 44 cm. , then its radius length = ... cm. (14 or 7 or 22)

[b] The triangle whose base length is 5 cm. , and the corresponding height of it is 6 cm. , its area = ... cm^2 (30 or 15 or 25)

[c] The area of the square with diagonal length 6 cm. is .... cm^2 (36 or 18 or 12)

[d] If $x + 8 = 15$, $x \in \mathbb{N}$, then x = ... (3 or 7 or 6)

[e] The shaded triangle is an image of the other triangle by .... (reflection or translation or rotation)

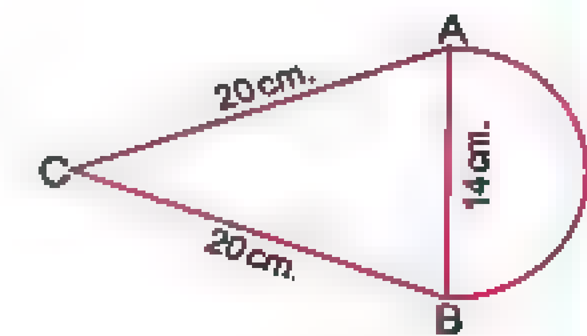
3 Solve the equations :

[a] $2x + 9 = 21$, $x \in \mathbb{N}$

[b] $x - 5 = 2$, $x \in \mathbb{N}$

4 [a] In the Cartesian co-ordinates plane draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of the triangle by reflection on $\overleftrightarrow{BC}$

[b] Calculate the perimeter of the opposite figure : $\left(\pi = \frac{22}{7}\right)$



5 ***The following table shows the frequency distribution of the number of work hours of 50 workers :***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the histogram and the frequency polygon representing these data.

Additional question

Choose the correct answer :

[a] $(4 \times \ldots\ldots) \times 78 = 7800$ (5 or 25 or 50 or 125)

[b] If O is the set of odd numbers , E is the set of even numbers , then $O \cap E = \ldots\ldots$ ($\mathbb{N}$ or O or E or $\varnothing$)

[c] $(2 + 6) \ldots\ldots \mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[d] c ...... a (number line: a, c) where a , c are two natural numbers. (< or = or > or ≥)

6 Giza Governorate



Answer the following questions :

1 ***Choose the correct answer :***

[a] If $x (75 + 10) = 9 \times 85$, then $x = \ldots\ldots$ (5 or 85 or 9 or 8)

[b] The number of axes of symmetry of the scalene triangle is ...... (0 or 1 or 2 or 3)

[c] The length of the base of a triangle whose area is 240 cm^2 and its height is 10 cm. is ...... cm. (4 or 12 or 48 or 240)

[d] Twice the number x subtracted 3 from it ...... ($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

2 ***Complete the following :***

[a] The square whose area is 72 cm^2 , the length of its diagonal = ... cm.

[b] If the age of a man now is x years, then his age after 7 years = ...

[c] If $5x - 7 = 33$, then $x = \ldots\ldots$

[d] The longest chord of a circle is 7 cm. the circumference = ... cm. where $\left(\pi = \frac{22}{7}\right)$

Final Examinations

3 [a] A rhombus in which the lengths of its diagonals are 12 cm. , 16 cm. and the height is 9.6 cm. calculate its area and its side length.

[b] In the two dimensions Cartesian co-ordinates, determine the points A (2 , 5) , B (5 , 2) , C (5 , 8) , then :

(1) Find the length of $\overline{BC}$

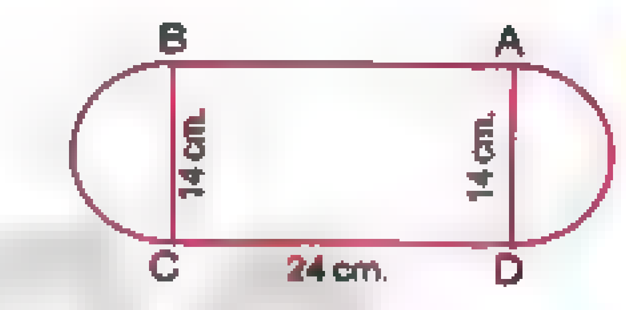
(2) Draw its image by reflection across $\overleftrightarrow{BC}$

(3) Calculate the area of Δ ABC

4 [a] Three times of a number x is 8 more than 1 , express it in an equation and solve it.

[b] Find the perimeter of the opposite figure :

Where $(\pi = \frac{22}{7})$

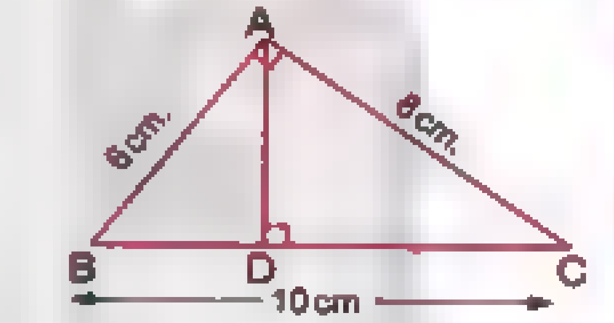


5 [a] *In the opposite figure :*

ABC is a right-angled triangle

AB = 6 cm. , AC = 8 cm. and BC = 10 cm.

Find : (1) Area of Δ ABC (2) Length of $\overline{AD}$



[b] ***The following table shows the frequency distribution of the number of work hours of 50 works :***

Sets	2 –	4 –	6 –	8 –	10 –	Total
Frequency	8	9	15	16	2	50

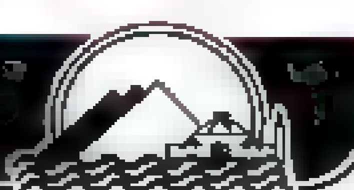
Graph these data using the frequency polygon.

Additional question

Use the commutative and associative properties in ℕ to calculate each of the following :

(1) 72 + 89 + 28 + 11 (2) 8 × 37 × 125





7 Giza Governorate — 6th October Language School

Answer the following questions :

1 ***Choose the correct answer :***

[a] Adding 8 to double x the symbolic expression is ......

($2x+8$ or $8-2x$ or $x+8$ or $8+3x$)

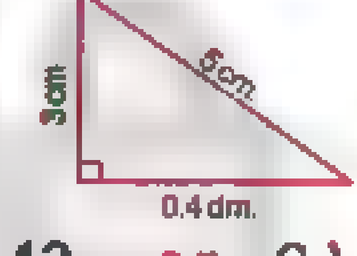
[b] The area of rhombus whose diagonals are of length 12 cm. and 16 cm. = ... cm^2 (56 or 28 or 96 or 129)

[c] Isosceles trapezium has .... line of symmetry.

(4 or 2 or 1 or 3)

[d] The circumference of a circle whose diameter is 14 cm. equals .... cm. $(\pi = \frac{22}{7})$ (44 or 22 or 88 or 100)

[e] Area of the opposite triangle is .... cm^2



(12 or 24 or 43 or 6)

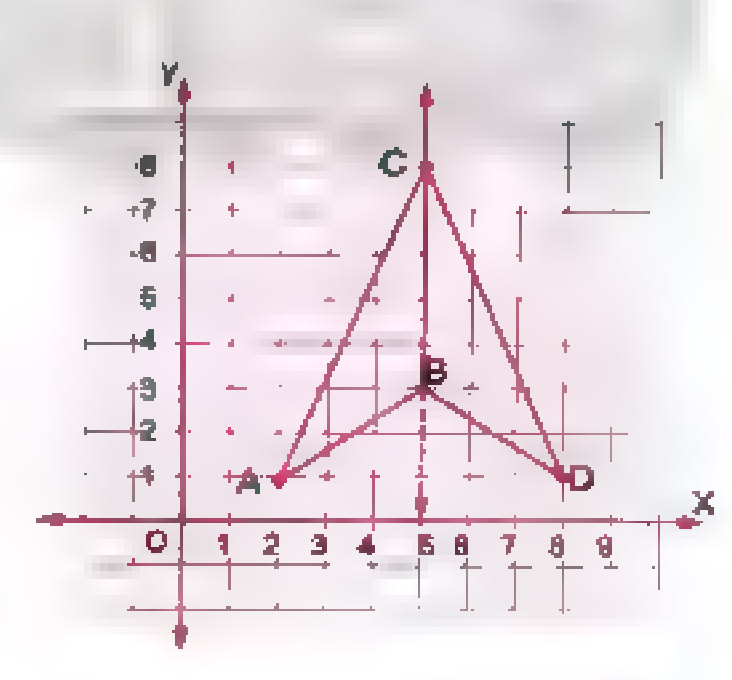
2 [a] ***Complete the following :***

(1) The area of the square whose perimeter is 24 cm. equals .... cm^2

(2) $5x = 10$, then $x =$ ....

(3) Square has .... lines of symmetry.

(4) The image of Δ CAB by reflection across $\overleftrightarrow{BC}$ is Δ ....



[b] Find the circumference of a circle whose radius length is 35 cm. $(\pi = \frac{22}{7})$

3 ***Which is greater in area ?***

A square whose diagonal is 10 cm. long. or a right-angled triangle in which the lengths of the sides of the right angle are 8 cm. and 15 cm.

4 [a] Graph the figure ABCD where A (2 , 7) , B (3 , 4) , C (8 , 4) , D (7 , 7)
What is the name of the figure ABCD ?

[b] Solve the equation : $5x + 3 = 13$ where $x \in \mathbb{N}$

5 ***The following table shows the recorded temperatures in 40 cities on a day :***

Temperatures	20 –	22 –	24 –	26 –	28 –	Total
Number of cities	7	9	11	8	5	40

Represent these data by frequency polygon.

Additional question

Complete :

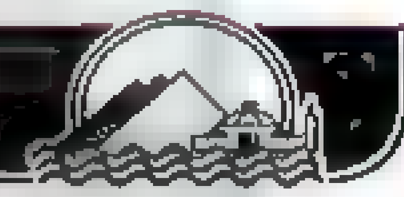
[a] The multiplicative identity element in $\mathbb{N}$ is ……

[b] $(9 \times 4) \times 3 =$ …………… $\times (3 \times 4)$

[c] The set of natural numbers less than 5 is ………

[d] 1 , 3 , 9 , 27 , …… , …… (in the same pattern)

8 Giza Governorate



Maths inspection

Answer the following questions :

1 ***Choose the correct answer :***

[a] If we multiply the number x by 7 , then we subtract 3 from the result we get …………… ($7x + 3$ **or** $3x + 7$ **or** $7x - 3$ **or** $x - 21$)

[b] If the side length of a rhombus is x and its perimeter is P , then the mathematical relation between x and P is P = ………
($x + 4$ **or** $4x$ **or** $4 - x$ **or** $x - 4$)

[c] The area of the rhombus whose diagonals are of length 12 cm. and 16 cm. = …………… cm^2 (56 **or** 25 **or** 96 **or** 192)

[d] The geometric transformation ◺◸ is ………
(translation **or** rotation **or** reflection)



2 ***Complete the following :***

[a] The shaded triangle is an image of the other triangle by ....

[b] If the perimeter of a square = 32 cm., then its area = ... cm^2

[c] If $x - 3 = 5$, $x \in \mathbb{N}$, then x = ...

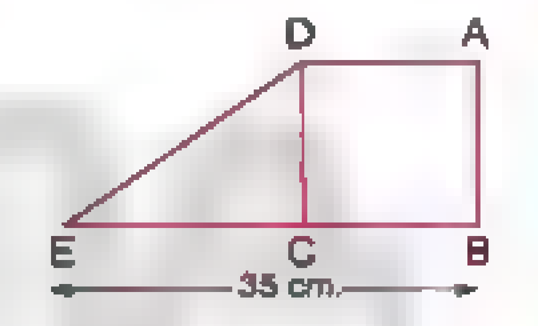
[d] The area of square whose diagonal length is 12 cm. is .... cm^2

3 [a] Solve the following equation : $5x - 7 = 33$, $x \in \mathbb{N}$

[b] In the Cartesian coordinates determine the points A (8 , 5) , B (8 , 2) , C (5 , 2) , D (5 , 7) , then draw the figure ABCD and draw its image by reflection in $\overleftrightarrow{CD}$

4 [a] Find the circumference of a circle whose diameter is 14 cm. , $(\pi = \frac{22}{7})$

[b] ***In the opposite figure :***



ABCD is a square of side length 15 cm.

, E ∈ BC , BE = 35 cm.

Find the area of the figure ABED

5 ***The following table shows the frequency distribution of the number of work hours of 50 workers :***

Sets	4 –	6 –	8 –	10 –	The Total
Frequency	12	8	16	14	50

Draw the frequency polygon to represent these data.

Additional question

Choose the correct answer :

[a] If O is the set of odd numbers , then O .... $\mathbb{N}$
($\in$ or $\notin$ or $\subset$ or $\not\subset$)

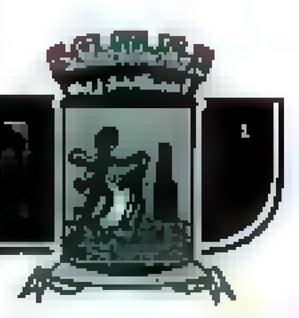
[b] {2 , 3} .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[c] If X = $\{x : x \in \mathbb{N} , 2 \le x \le 3\}$, then X = ...
({2 , 3} or {3} or {2} or $\varnothing$)

[d] The least prime number × any prime number = ... number.
(odd or even or prime or other wise)

9 Alexandria Governorate

Middle Educational Zone
Maths inspection



Answer the following questions :

1 Complete :

[a] The area of a square of diagonal length 8 cm. = ... cm^2

[b] If $35 + x = 18 + 35$, then x = ...

[c] The triangle whose base length is 5 cm. and its corresponding height is 6 cm. then its area = ... cm^2

[d] The rhombus whose area is 36 cm^2 and the length of one of its diagonals is 8 cm., then the length of the other diagonal = ... cm.

2 Choose the correct answer :

[a] If we multiply the number x by 7, then we subtract from the result 3, we shall get ....

($7x + 3$ or $3x + 7$ or $7x - 3$ or $3 - 7x$)

[b] The area of rhombus whose diagonals 10 cm. and 20 cm. is .... cm^2 (200 or 30 or 100 or 400)

[c] The sum of two numbers a and b is 10, then b = ...

($10 - a$ or $a - 10$ or $a + 10$ or $10 - b$)

[d] The diameter length of a circle whose circumference is 44 cm. = ... cm. $\left(\pi = \frac{22}{7}\right)$ (28 or 21 or 14 or 7)

3 [a] On the coordinate plane, draw $\triangle$ ABC where A (3, 5), B (6, 5), C (3, 2), then draw the image of $\triangle$ ABC by reflection across $\overleftrightarrow{AC}$

[b] **Complete :**

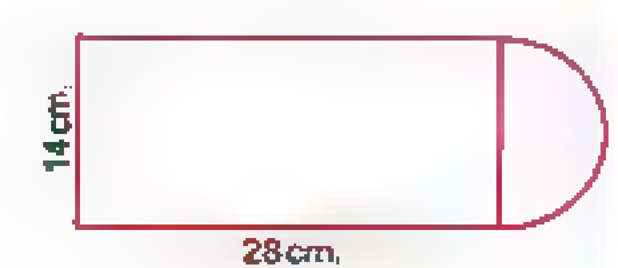
(1) The perimeter of an equilateral triangle whose side length is L cm. = ... cm.

(2) The area of a rectangle whose length is x cm. and width is 5 cm. = ... cm^2

4 [a] **Solve each of the following equations :**

(1) $3x + 7 = 19$ (2) $2x - 15 = 7$

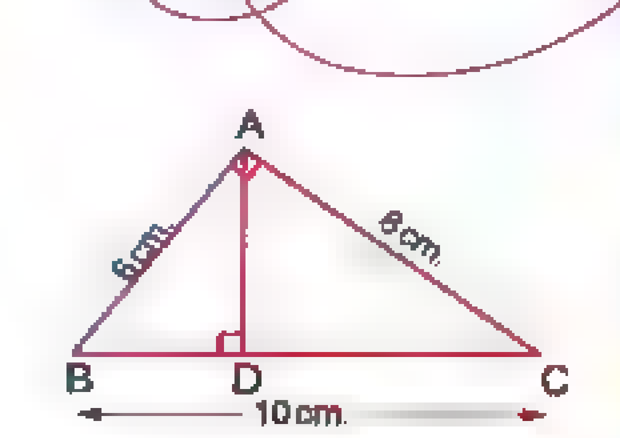
[b] Calculate the perimeter of the following figure, where $\left(\pi = \frac{22}{7}\right)$







[a] ***In the opposite figure :***



ABC is a right-angled triangle at A, $\overline{AD} \perp \overline{BC}$

Find the area of $\triangle ABC$ and the length of $\overline{AD}$

[b] ***The following table represents the marks of 50 students in the math exam in a month.***

Sets	10 –	20 –	30–	40–	Total
Frequency	10	12	18	10	50

Draw the frequency polygon which represents the given data.

Additional question

[a] Using the properties of addition find the value : 32 + 47 + 68 + 3

[b] ***Use the distribution property in ℕ to find :***

(1) 112 × 99 **(2)** 215 × 101

10 Alexandria Governorate

East Educational Zone
Supervision of Maths



Answer the following questions :

1 ***Choose the correct answer :***

[a] Subtracting 3 from double of the number x = ...

($x - 3$ **or** $2x - 3$ **or** $3x + 2$ **or** $5x$)

[b] A square whose diagonal length is 8 cm. , its area = ... cm^2

(8 **or** 16 **or** 32 **or** 64)

[c] There are .... axes of symmetry of an equilateral triangle.

(0 **or** 1 **or** 2 **or** 3)

[d] A year and 3 months = ... months.

(13 **or** 33 **or** 15 **or** 27)

2 ***Complete :***

[a] $4\frac{2}{5}$ = ... (as a decimal)

[b] If $x + 8 = 15$, $x \in ℕ$, then x = ...

[c] The number of axes of symmetry of the rhombus = ...

[d] A parallelogram whose area is 36 cm^2 and the length of a side of it = 9 cm. , then the corresponding height to this side = ... cm.

3 [a] ***Solve the equations :***

(1) $x - 5 = 19$, $x \in \mathbb{N}$ (2) $2x + 9 = 21$, $x \in \mathbb{N}$

[b] A rhombus of diagonal lengths are 12 cm. and 16 cm., calculate its area.

4 [a] Δ ABC is a right-angled triangle at B , where AB = 6 cm., BC = 8 cm. and AC = 10 cm. Find the area of this triangle.

[b] In a 2-dimensional co-ordinate plane , plot the points A (8 , 5) , B (8 , 2) , C (5 , 2) and D (5 , 7). If $\overleftrightarrow{CD}$ is the axis of reflection of the figure ABCD , then determine the image of ABCD.

5 [a] Calculate the circumference of a circle , if the longest chord in this circle is 7 cm. where $\left(\pi = \frac{22}{7}\right)$

[b] ***Represent the following data by frequency polygon :***

Sets	20 –	30 –	40 –	50 –	Total
Frequency	8	10	16	4	50

Additional question

Complete :

[a] 99 added to the neutral element of multiplication = ...

[b] 21 + (36 + ...) = (21 + ...) + 84

[c] The set of natural numbers less than 7 and greater than 2 is ....

[d] 1 , 4 , 9 , 16 , ... , ... (in the same pattern)

11 El-Kalyoubia Governorate Directorate of Education



Answer the following questions :

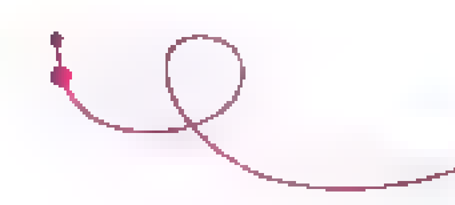
1 ***Complete each of the following :***

[a] The square whose diagonal length = 10 cm. , its area = ... cm^2

[b] If $x + 2 = 7$, $x \in \mathbb{N}$, then $x - 2 =$ ....

[c] The area of the triangle whose base length is 6 cm. and height 8 cm. = ... cm^2

[d] $\frac{\text{circumference of the circle}}{\text{diameter length}} =$ ....



2 ***Choose the correct answer :***

[a] Number of lines of symmetry of the square = ...

(1 or 2 or 3 or 4)

[b] Subtracting 9 from twice of the number x = ...

($2x-9$ or $9-2x$ or $2x+9$ or $9x$)

[c] If $X = \{x : x \in \mathbb{N}, 5 \le x < 7\}$, then X = ...

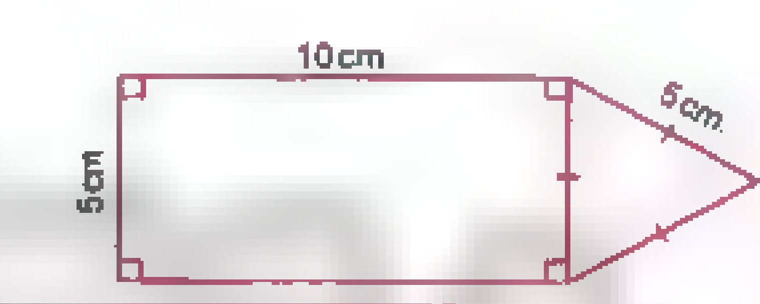
({5} or {6} or {5, 6} or {5, 6, 7})

[d] If the sum of the two numbers x and y is 20, then y = ...

($20+x$ or $20-x$ or $x-20$ or $\frac{x}{20}$)

3 [a] Find the radius length of the circle whose circumference = 132 cm. (Where $\pi = \frac{22}{7}$)

[b] Find the perimeter of the opposite figure :



4 [a] Solve the equation : $2x - 5 = 3$, where $x \in \mathbb{N}$

[b] In the Cartesian coordinates plane, locate the points A (2, 2), B (5, 2), C (5, 6) :

(1) Find the length of each of $\overline{AB}$ and $\overline{BC}$

(2) Draw the image of figure ABC by reflection in $\overleftrightarrow{BC}$

5 ***The following table shows the marks of 40 pupils in maths exam :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	6	K	14	12	40

(1) Find the value of K

(2) Represent these data by the frequency polygon.

12 El-Sharkia Governorate

Directorate of Education
Dep. of Governmental L. Schools



Answer the following questions :

1 ***Choose the correct answer :***

[a] The area of square whose diagonal length is 8 cm. is ...... cm^2

(64 or 32 or 16 or 10)

[b] If $x + 3 = 8$, $x \in \mathbb{N}$, then $x =$ .... (11 or 24 or 13 or 5)

[c] If the sum of two numbers x and y is 20 , then y = ...

($x - 20$ or $20 - x$ or $x + 20$ or $\frac{x}{20}$)

[d] The square has .... symmetric axes. (1 or 2 or 3 or 4)

2 ***Complete the following :***

[a] Area of parallelogram = ... × ....

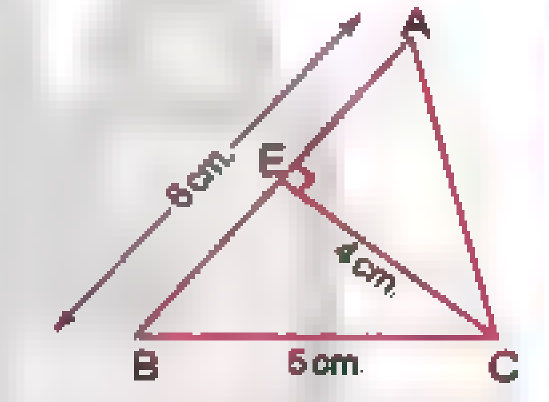
[b] The radius length of circle with circumference 44 cm. and $\pi = \frac{22}{7}$ is .... cm.

[c] If $2x = 10$ and $x \in \mathbb{N}$, then $x =$ ....

[d] The length of the base of a triangle whose area = 80 cm^2 and its height = 10 cm. is .... cm.

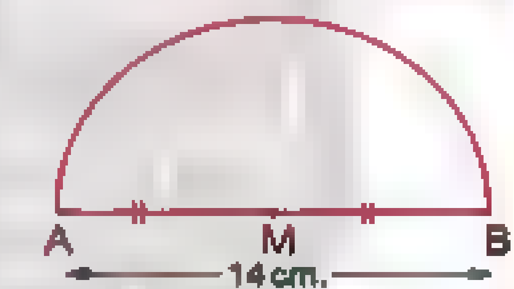
3 [a] Solve the equation in $\mathbb{N}$: $\frac{1}{2}x - 5 = 3$

[b] ***In the opposite figure :***



ABC is a triangle , $\overline{CE} \perp \overline{AB}$,
if AB = 6 cm. , BC = 5 cm.
and CE = 4 cm. Find area of Δ ABC

4 [a] Calculate the perimeter of the opposite figure where AB = 14 cm. $\left(\pi = \frac{22}{7}\right)$



[b] ***Which is greater in area ?***

a parallelogram of base 10 cm. and corresponding height 6 cm.
or a rhombus of diagonals lengths 12 cm. and 16 cm.

5 [a] In 2-dimensional coordinate plane locate the points A (3 , 1) , B (5 , 1) , C (5 , 3) , D (3 , 3)

Name the figure ABCD , then find its area.

[b] ***The following table shows the recorded temperatures in 40 cities on day :***

Temperatures	20 –	22 –	24 –	26 –	28 –	Total
Number of cities	7	10	12	6	5	40

Draw each of histogram and the frequency polygon.



Additional question

Choose the correct answer :

[a] 49 + 8 ……… $\mathbb{N}$ (∈ or ∉ or ⊂ or ⊄)

[b] If X = {x : x ∈ $\mathbb{N}$, 3 ≤ x < 5} , then X = ……… ({4} or {3} or {3 , 4} or {4 , 5})

[c] If E is the set of even numbers, then E ……… $\mathbb{N}$ (∈ or ∉ or ⊂ or ⊄)

[d] (8 × 3) × 5 = ……… × (3 × 5) (3 or 5 or 8 or 15)

13 El-Monofia Governorate

El-Bagour Educational Zone
Maths Inspection



Answer the following questions :

1 ***Complete :***

[a] The perimeter of a square whose side length is x cm. = ……… cm.

[b] The sum of two numbers is 21 one of them is x , then the other = ………

[c] The area of a rectangle whose length is x cm. and width is 5 cm. = ……… cm^2

[d] The number of axes of symmetry of the rhombus = ………

2 ***Choose the correct answer :***

[a] Twice the number x subtracted 3 from it = ……… ($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

[b] If $x + 3 = 5$, $x \in \mathbb{N}$, then : x = ……… (1 or 2 or 3 or 4)

[c] The square whose diagonal length is 8 cm. its area = ……… cm^2 (64 or 32 or 16 or 8)

[d] The length of the base of the triangle is 8 cm. and its height is 5 cm. , then its area = ……… cm^2 (9 or 40 or 8 or 20)

3 [a] Find the circumference of circle with diameter length 14 cm. $\left(\pi = \frac{22}{7}\right)$

[b] Solve the following equation : $x - 5 = 8$, $x \in \mathbb{N}$

4 In the Cartesian co-ordinates plane determine the points A (2 , 2) , B (5 , 2) , C (5 , 8) , D (2 , 8), if $\overleftrightarrow{BC}$ is the axis of reflection of the figure ABCD , then determine the image of the figure ABCD

5 *Draw the frequency polygon for the following frequency distribution :*

Sets	10 –	12 –	14 –	16 –	18 –	20 –	Total
Frequency	2	5	7	11	6	4	35

Additional question

[a] If X = {a : a ∈ ℕ , 1 ≤ X < 5} , Y = {4 , 5 , 6}

Find : (1) X ∩ Y (2) X ∪ Y (3) X – Y

[b] Use the properties of addition in ℕ to find result of :
49 + 257 + 51 (mention the used property)

14 El-Gharbia Governorate General Mathematics Supervision



Answer the following questions :

1 *Complete :*

[a] If $x + 8 = 18$, then x = ...

[b] The rhombus with diagonals lengths 6 cm., and 8 cm.
its area = ... cm²

[c] If we add 3 to twice the number x , then we will get the number ....

[d] The number of axes of symmetry of the rectangle = ...

2 *Choose the correct answer :*

[a] The square whose diagonal length = 8 cm. , its area = ... cm²
(64 or 32 or 16 or 8)

[b] Subtracting 7 from the double of the number x = ...
($x - 7$ or $2x - 7$ or $7x + 2$ or $4x$)

[c] If Y + 10 = 10 , then Y = ... (100 or 10 or 1 or 0)

[d] The square has .... lines of symmetry. (0 or 1 or 3 or 4)

3 [a] Find the area of the triangle whose base length is 8 cm. and its corresponding height is 10 cm.

[b] Solve the equation : $2x - 7 = 5$ where $x \in \mathbb{N}$

4 [a] On the coordinate plane draw Δ ABC where : A (2 , 1) , B (5 , 1) , (5 , 5) , then draw the image of Δ ABC by reflection in $\overleftrightarrow{BC}$

[b] Find the circumference of the circle whose diameter is 7 cm. $\left(\pi = \frac{22}{7}\right)$



5 [a] Solve the equation : $x + 3 = 12$ where $x \in \mathbb{N}$

[b] ***Represent the following date by a frequency polygon.***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	4	6	5	10	25

Additional question

Complete :

[a] The smallest natural number is ....

[b] $23 \times (98 + 2) = 23 \times$ .... = ...

[c] The set of prime numbers which are less then 15 is ....

[d] $(20 \times 50) \times 30 =$ .... $\times (50 \times 30)$

15 El-Dakahlia Governorate

Maths Supervision



Answer the following questions :

1 ***Complete :***

[a] Subtract 3 from the number y, the symbolic experssion is ....

[b] The perimeter of square whose side length is L = ...

[c] The area of the triangle = $\frac{1}{2} \times$ .... $\times$ ....

[d] The area of a parallelogram = ...

2 ***Choose the correct answer :***

[a] If $x + 8 = 15$, $x \in \mathbb{N}$, then $x =$ .... (3 *or* 7 *or* 6 *or* 5)

[b] The square whose diagonal length is 8 cm., its area = ... cm^2 (64 *or* 32 *or* 16 *or* 8)

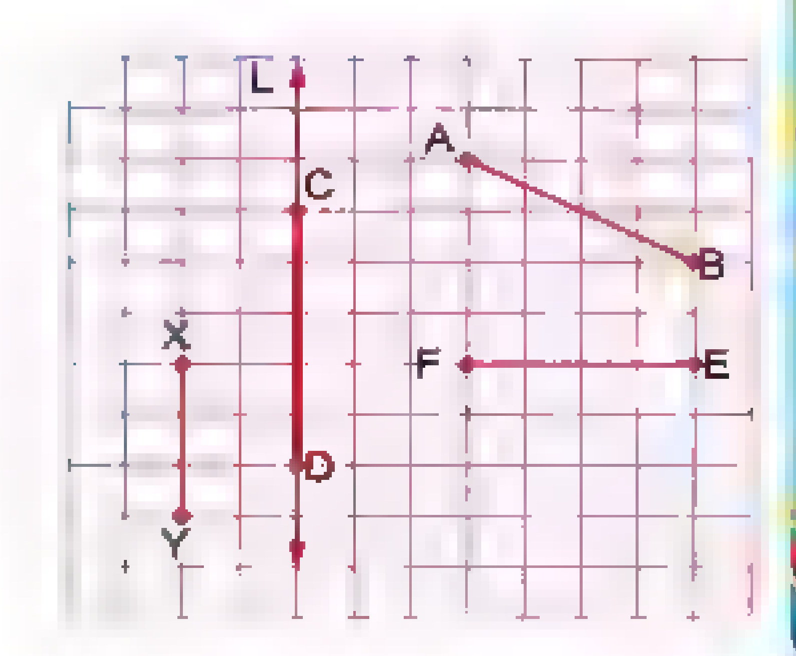
[c] The number of axes of symmetry of rhombus equals .... (0 *or* 1 *or* 2 *or* 4)

[d] The area of the largest rectangle whose perimeter is 24 cm. = ... cm^2 (15 *or* 36 *or* 72 *or* 144)

3 [a] ***Which is greater in area ?*** a rhombus in which the lengths of its diagonals are 8 cm. and 6 cm. or the parallelogram in which the length of its base is 10 cm. and the corresponding height is 5 cm. , then calculate the difference between them.

[b] ***Complete :*** The circumference of a circle = ...

4 Find the image of the indicated line segments by reflection across L , then complete :

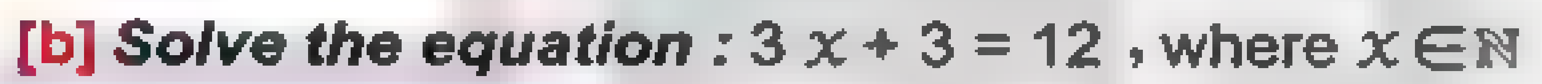


(1) The image of $\overline{AB}$ by reflection across L is ....

(2) The image of $\overline{EF}$ by reflection across L is ....

(3) The image of $\overline{XY}$ by reflection across L is ....

(4) The image of $\overline{CD}$ by reflection across L is ....



5 [a] An employee spends his monthly salary as follow 1000 pounds for food, 500 pounds for clothes 250 the rent of the flat 250 other spending represent there data on the shown circular sectors.



[b] ***Solve the equation :*** $3x + 3 = 12$, where $x \in \mathbb{N}$

Additional question

Choose the correct answer :

[a] $\frac{9-5}{3-3} =$ .... (zero *or* 3 *or* 4 *or* meaningless)

[b] The smallest counting number is .... (0 *or* 1 *or* 2 *or* 3)

[c] $\{5, 7, 8\}$ .... $\mathbb{N}$ ($\subset$ *or* $\not\subset$ *or* $\in$ *or* $\notin$)

[d] If $X = \{x : x \in \mathbb{N}, x \le 2\}$, then X = ...
($\{0, 1\}$ *or* $\{1\}$ *or* $\{0, 1, 2\}$ *or* $\varnothing$)

16 Ismailia Governorate

Directorate of Education
Directing Mathematics

Answer the following questions :

1 ***Complete :***

[a] If $3x = 21$, then $x =$ ....

[b] If b = 3 , then 2 b – 5 = ...

[c] Adding 5 to three times a number y is ....

[d] A rhombus its area 50 cm^2 and the length of one of its diagonals 25 cm. , then the length of other diagonal = ... cm.





1 Choose the correct answer :

[a] The opposite transformation ◺ ◿ is ....
(translation *or* rotation *or* reflection)

[b] If the side lengths of a triangle are equal in length then the triangle is .... triangle. (scalene *or* isosceles *or* equilateral)

[c] The angle whose measure 180 is called .... angle.
(right *or* obtuse *or* acute *or* straight)

[d] If $y = 3x + 5$, then the constant .... (y *or* x *or* 3 *or* 5)

2 [a] ***Which is greater in area ?*** a square its diagonal length 10 cm. or a parallelogram its base length 12 cm. and height 8 cm.

[b] A circle its diameter 21 cm. Find its circumference $\left(\pi = \frac{22}{7}\right)$

3 [a] In the coordinate plane draw the triangle ABC where A (1 , 1) , B (3 , 1) , C (3 , 5) , then draw its image by reflection on $\overleftrightarrow{BC}$

[b] ***Solve the equations :***

(1) $2x + 3 = 13$ (2) $\frac{1}{2} y = 6$

4 [a] A triangle its area 48 cm² and base length 8 cm. , find the length of its height.

[b] ***The following table shows the marks of 40 pupils in mathematics exam in one month where the full mark is 50 marks :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	8	10	40

Represent these data by frequency polygon.

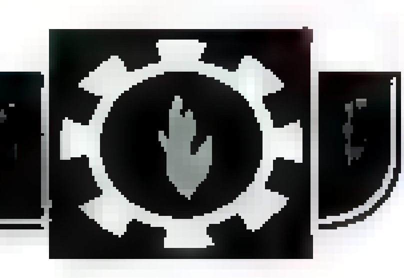
Additional question

Calculate using commutative , associative and distributive properties :

(1) $642 + 171 + 358 + 29$ (2) 25×304

17 Suez Governorate

Directorate of Educational
Maths Inspectorate



Answer the following questions :

1 Choose the correct answer :

[a] If $x + 3 = 5$, $x \in \mathbb{N}$, then $x =$ .... (1 or 2 or 3 or 4)

[b] The area of square of diagonal length 6 cm. is .... cm^2 (18 or 36 or 24 or 6)

[c] The sum of the two numbers a and b is 10 , then b = ... (a – 10 or a or 10 – a or 10)

[d] The number of axes of symmetry of the rhombus = ... (1 or 0 or 3 or 2)

[e] If $X = \{x : x \in \mathbb{N} , 3 \leq x < 5\}$, then $x \in$ .... ({4} or {3 , 4} or {3} or {4 , 5})

2 Complete :

[a] Add 5 to twice the number x = ...

[b] The triangle of base length 5 cm. and the corresponding height is 6 cm. , its area = ... cm^2

[c] The number of axes of symmetry of an equilateral triangle is ....

[d] The circumference of a circle with diameter 20 cm. is .... π cm.

[e] If $945 = (x \times 100) + 45$, then x = ...

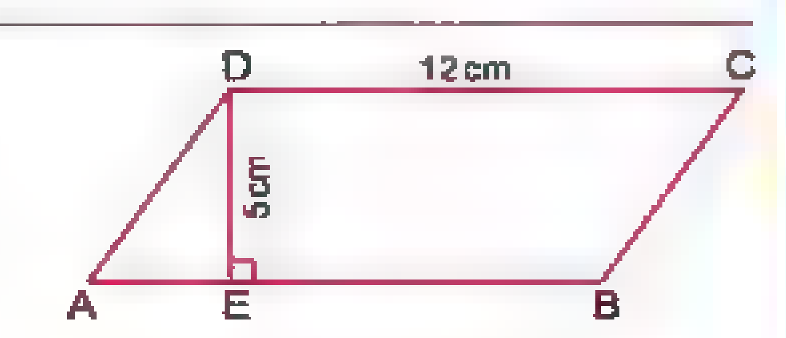
3 [a] Solve the equation : $3x + 7 = 19$, $x \in \mathbb{N}$

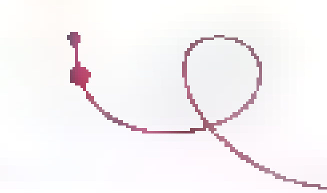
[b] Find the area of rhombus whose diagonals lengths 20 cm. and 10 cm.

4 [a] Find the circumference of the circle of radius 21 cm. $\left(\pi = \frac{22}{7}\right)$

[b] In 2-dimensional coordinate plane locate the points A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of Δ ABC by reflecting across $\overleftrightarrow{BC}$

5 [a] Find the area of parallelogram ABCD





[b] ***The following table shows the marks of 35 students in math exam :***

Sets	5 –	10 –	15 –	20 –	25 –	Total
Frequency	5	9	11	6	4	35

Represent these data by frequency polygon.

18 Port Said Governorate



Answer the following questions :

1 ***Choose the correct answer :***

[a] If $x + 7 = 9$, $x \in \mathbb{N}$, then $x =$ .... (16 or 2 or 11 or 13)

[b] The area of a triangle whose base length 5 cm. and the corresponding height 6 cm. is .... cm².

(15 or 3 or 11 or 60)

[c] Subtract 4 form the number y the symbolic expression is ......

(2 y – 4 or y + 4 or y – 4 or 2 y + 4)

[d] The number of axes of symmetry of the square ....

(1 or 2 or 3 or 4)

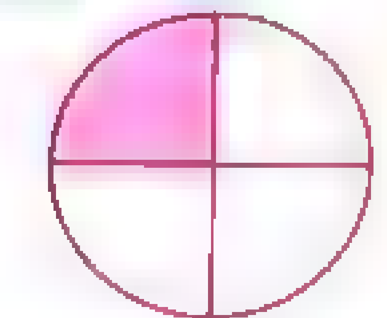
2 ***Complete the following :***

[a] Shorouk saved x pounds , her father gave her 10 pounds , then she has .... pounds.

[b] The area of a rhombus whose diagonals are 6 cm. and 8 cm. is .... cm².

[c] ***In the opposite figure :***

The shaded sector represents .... of the circle.



[d] The area of square = $\frac{1}{2}$ × diagonal length × .....

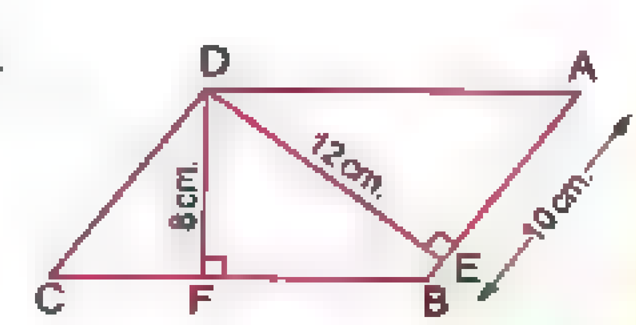
3 **[a]** Solve the following equation : $2x + 9 = 21$, $x \in \mathbb{N}$

[b] ***In the opposite figure :***

ABCD is a parallelogram in which AB = 10 cm. , DE= 12 cm. , DF = 8 cm. ***Find :***

(1) The area of the parallelogram ABCD.

(2) The length of $\overline{BC}$



4 [a] Find the circumference of a circle with diameter 10 cm. (π = 3.14)

[b] In the Cartesian coordinates plane , determine the points A (2 , 5) , B (5 , 2) and C (5 , 8) , then draw the image of $\triangle$ ABC by reflection in $\overleftrightarrow{BC}$

5 ***From the following table draw the histogram and the frequency polygon :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

Additional question

Complete :

(1) The multiplicative neutral element in $\mathbb{N}$ is ....

(2) If X = $\{x : x \in \mathbb{N} , 3 \leq x < 4\}$, then $x \in$ ....

(3) The set of natural numbers less than 7 is ....

(4) 32 + (59 + ...) = (32 + 68) + ...

19 Damietta Governorate

Damietta Inspection of Mathematic
Official Language Schools



Answer the following questions :

1 ***Choose the correct answer :***

[a] If the ordered pair (2 , 5) = (2 , y) , then y = ...

(2 or 3 or 4 or 5)

[b] If the sum of two numbers x and y is 20 , then y = ...

($20 + x$ or $20 - x$ or $x - 20$ or $\frac{x}{20}$)

[c] Circumference of the circle = ...

(π r or 2 π r or π or π + r)

[d] The number of axes of symmetry of the rhombus is ....

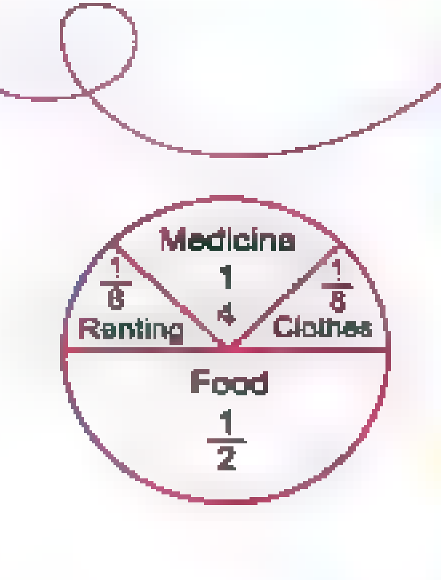
(0 or 1 or 2 or 4)

2 ***Complete :***

[a] A square whose diagonal is 8 cm. , then its area = ... cm^2

[b] If the number x is 9 more , then the double of y , then x = ...

[c] If $x - 4 = 6$, $x \in \mathbb{N}$, then x = ...



[d] An employee spends his salary as follows

$\frac{1}{8}$ of it to clothes , $\frac{1}{2}$ of it to food

, $\frac{1}{4}$ of it to medicine and

$\frac{1}{8}$ of it to renting. If his salary was L.E. 1 600

, then the spends of food = L.E. ....

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[a] *In the opposite figure :*



ABCD is a parallelogram in which

AB = 10 cm. , DE = 12 cm. , DF = 8 cm.

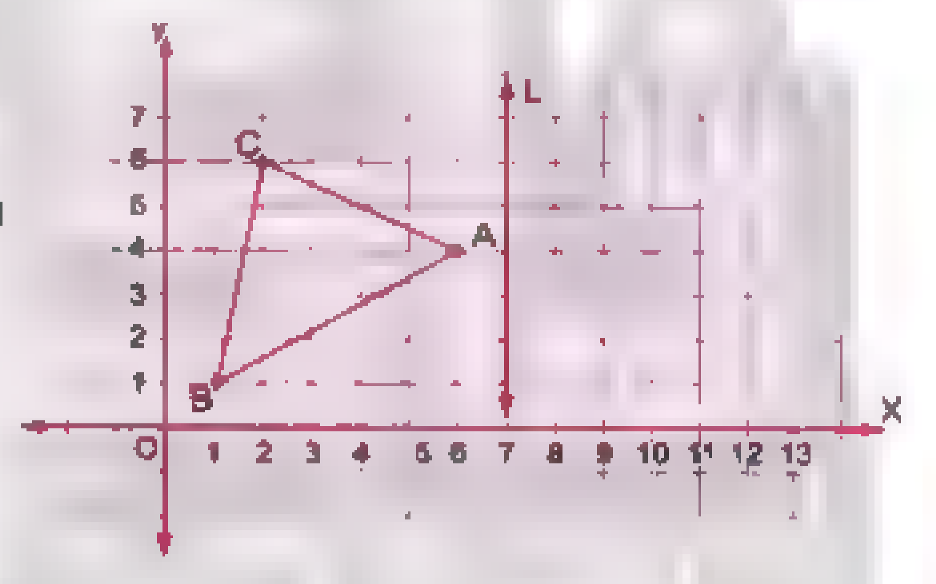
Find : (1) The area of the parallelogram ABCD

(2) The length of $\overline{BC}$

[b] Calculate the circumference of the circle whose diameter is 14 cm. $\left(\pi = \frac{22}{7}\right)$

---

[a] In the cartesian coordinates plane , from the opposite figure :



(1) **Complete :** A (.......... , ...)

, B (.......... , ...)

and C (.......... , ...)

(2) If L is the axis of reflection of the Δ ABC , draw Δ A'B'C' the image of Δ ABC by reflection in the straight line L

[b] Solve the following equation :

$2x + 9 = 21$, $x \in \mathbb{N}$

---

[a] A triangle whose area is 120 cm² and its height is 5 cm.

Find the length of its base.

[b] ***The following table shows the frequency distribution of the number of work hours of 50 workers :***

Set	10 –	20 –	30 –	40 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represent these data

Final Examinations

Additional question

Choose the correct answer :

(1) (5 – 9) ………… $\mathbb{N}$ ($\in$ or $\subset$ or $\notin$ or $\not\subset$)

(2) The next number in the pattern 1 , 3 , 9 , 27 is ………… (30 or 33 or 81 or 36)

(3) (4 × …………) × 78 = 7800 (5 or 25 or 50 or 125)

(4) (7 × 2) × 5 = ………… × (2 × 5) (2 or 5 or 7 or 14)

20 Kafr El-Sheikh Governorate

El-Borg Educational Directorate
Directory of Maths



Answer the following questions :

1 *Complete :*

[a] The circumference of the circle = π × …………

[b] If $x + 2 = 5$, then x = …………

[c] If $y = x + 5$, then the constant is …………

[d] Adding 5 to twice the number x is …………

2 *Choose the correct answer :*

[a] If $3x = 15$, $x \in \mathbb{N}$, then x = ………… (12 or 5 or $\frac{1}{5}$ or $\frac{1}{3}$)

[b] If A (2 , 3) , B (2 , 7) , then the midpoint of $\overline{AB}$ is …………
((10 , 4) or (2 , 5) or (2 , 10) or (0 , 9))

[c] The area of a rhombus of diagonals 10 cm. and 20 cm. = ………… cm^2
(200 or 30 or 100 or 400)

[d] The sum of the two numbers x and y is 10 , then x = …………
(10 or $10 + x$ or $10 - x$ or $10 - y$)

3 [a] If the number x exceeds twice the number y by 9 write the mathematical relation between x and y

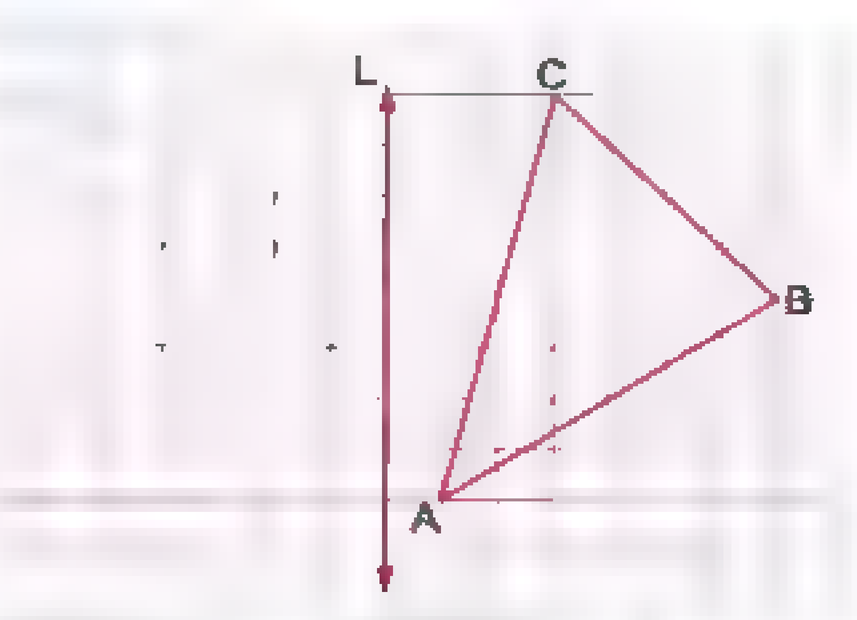
[b] Solve the equation : $2x - 1 = 3$ in $\mathbb{N}$

4 [a] Find the area of a triangle whose base length is 12 cm. and height is 5 cm.

[b] Find the circumference of a circle if its diameter is 14 cm. $\left(\pi = \frac{22}{7}\right)$



5 [a] Draw the image of the Δ ABC by reflection in the straight line L



[b] ***The following table shows the marks of 50 pupils in math test in one month :***

Sets	10 –	20 –	30 –	40 –	Sum
Frequency	10	12	18	10	50

Represent these data by frequency polygon.

Additional question

[a] ***List , then represent the following set on the number line :***
$X = \{x : x \in \mathbb{N} , 2 \leq x < 6\}$

[b] ***Use the distributive property to get the product of :*** 18×99

21 El-Beheira Governorate

Rashid Educational Zone
Maths supervision



Answer the following questions :

1 ***Complete the following :***

[a] Twice a number x is ....

[b] The area of the rhombus = $\frac{1}{2}$ × the product of ....

[c] If the area of square is 8 cm^2 , then its diagonal length = ... cm.

[d] The perimeter of equilateral triangle whose side is x = ...

2 ***Choose the correct answer :***

[a] If $x + 5 = 11$, then x = ... (5 or 6 or 7 or 8)

[b] A circumference of a circle is 22 cm. , then its diameter length = ... cm. where $\pi = \frac{22}{7}$ (3.5 or 7 or 8 or 11)

[c] The square has .... axes of symmetry. (0 or 2 or 3 or 4)

[d] A triangle whose area = 120 cm^2 , and its height = 10 cm. , then its base length = ... cm. (12 or 18 or 24 or 10)

3 [a] ***Solve the equations in $\mathbb{N}$:***

(1) $x - 3 = 21$ (2) $3y = 27$

[b] ***Which is larger in area ?*** a triangle with base 8 cm. and height 7 cm. or a parallelogram with base length 6 cm. and height 5 cm.

4 [a] If the diameter length of a bicycle's wheel is 66 cm. what is the covered distance if the wheel turns 1000 rounds ? where (π = 3.14)

[b] In the coordinate plane , draw the triangle ABC where A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of the triangle ABC by reflection in $\overleftrightarrow{BC}$

5 [a] The lengths of the diagonals of a rhombus are 30 cm. and 20 cm. Calculate its area.

[b] ***Represent the following data by a frequency polygon.***

Sets	3 –	6 –	9 –	12 –	15 –	Total
Frequency	4	7	10	6	3	30

Additional question

Complete :

[a] The additive neutral element in $\mathbb{N}$ is ....

[b] 47 × (36 + 64) = 47 × .... = ...

[c] The set of even numbers – the set of odd numbers = ...

[d] If 5 + 0 = 0 + 5 = 5 , then it is called .... property.

22 El-Fayoum Governorate

Directorate of Education
Supervisors of Mathematics



Answer the following questions :

1 ***Choose the correct answer :***

[a] If we subtract 5 from x , we get .... ($5x$ or $5 - x$ or $x - 5$ or $x + 5$)

[b] The area of the triangle in which the length of its base 10 cm. and its height 6 cm. is .... cm^2 (30 or 60 or 16 or 15)

[c] 34000 = ………… thousands. (34000 *or* 3400 *or* 340 *or* 34)

[d] The shown transformation is called ………… b | d

(reflection *or* rotation *or* translation)

2 ***Complete each of the following :***

[a] $5x = 35$, $x \in \mathbb{N}$, then $x =$ ……………

[b] The number of axes of symmetry of a square = ……………

[c] The smallest odd prime number is ……………

[d] If the perimeter of a square is 32 cm. , then its side = ………… cm.

3 [a] ***Solve the following equations such that $x \in \mathbb{N}$:***

(1) $x - 4 = 1$

(2) $3x + 8 = 29$

[b] A parallelogram of area 36 cm^2 , and the length of its base is 4 cm. , find the corresponding height of its base.

4 [a] ***Which is smaller in area ?***

A rhombus whose diagonals lengths is 8 cm. and 5 cm. or a rectangle whose width is 5 cm. and length is 6 cm.

[b] A circle of radius 14 cm. , find its circumference. $\left(\pi = \frac{22}{7}\right)$

5 [a] On a coordinate plane , draw the figure ABCD where A (1 , 1) , B (4 , 1) , C (4 , 3) , D (1 , 3) then complete :

(1) The length of AB = …………… unit.

(2) The name of the figure ABCD is ……………

[b] ***Draw the frequency polygon which represent the following table of data :***

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	3	4	6	4	3	20

Additional question

Complete using ($\in$, $\notin$, $\subset$ or $\not\subset$) :

[a] $\frac{0}{3}$ …………… $\mathbb{N}$

[b] $\{\frac{1}{3}, 1, 2\}$ …………… $\mathbb{N}$

[c] The set of even numbers …………… The set natural numbers.

[d] $\{2, 3, 0, 4\}$ …………… $\mathbb{N}$

23 Beni Suef Governorate

Directorate of Education
Directorate of Official Lang Schools



Answer the following questions :

1 Choose the correct answer :

[a] $x + 5 = 20$, $x \in \mathbb{N}$, then $x =$ .... (4 or 6 or 15 or 25)

[b] The number of altitudes of the triangle is .... (0 or 1 or 2 or 3)

[c] The number of axes of symmetry of the rhombus = ... (1 or 2 or 3 or 4)

[d] If the sum of two numbers x and y is 20 , then y = ... ($20 + x$ or $20 - x$ or $x - 20$ or $y + 20$)

2 Complete the following :

[a] Area of rectangle = ... × ....

[b] The length of diagonal of square is 12 cm. , then its area = ... cm^2

[c] Area of parallelogram = ... × ....

[d] The opposite transformation is ....

3 [a] ***Solve the equations , where*** $x \in \mathbb{N}$ **:**

(1) $2x + 7 = 19$ (2) $x - 8 = 18$

[b] Find the circumference of a circle with a radius 14 cm. $\left(\pi = \frac{22}{7}\right)$

4 In a coordinate plane determine the points A (2 , 2) , B (4 , 2) , C (4 , 8) and D (2 , 8) , then :

[a] Draw ABCD

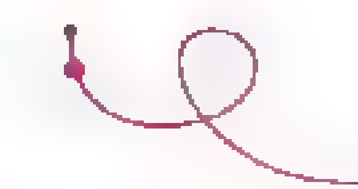
[b] Draw the image ABCD by reflection on $\overleftrightarrow{BC}$

5 [a] ***Which is greater in area ?*** a rhombus whose diagonals are 6 cm. and 8 cm. or a square whose diagonal is 8 cm.

[b] ***The following data represents the marks in Arabic test for students in one classroom :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	8	12	16	14	50

Draw the histogram for this distribution.



Additional question

Using the properties of addition and multiplication in ℕ , find :

[a] 48 + 37 + 52 + 63   [b] 125 × 17 × 8



24 El-Menia Governorate

Governmental Language Schools
General Supervisor of mathematics

Answer the following questions :

1 Complete :

[a] $3x = 15$, then x = ...

[b] The square whose diagonal 8 cm. , its area .... cm^2

[c] The number of axes of symmetry of the rhombus = ...

[d] The perimeter of a rectangle is 20 cm. if its length is x , then its width is ....

2 Choose the correct answer :

[a] The diameter length of a circle is 14 cm. , then its radius = ... cm.
(14 or 7 or 28 or 3.5)

[b] The length of the base of the traingle is 8 cm. and its height is 5 cm. , then the area = ... cm^2 (8 or 9 or 20 or 40)

[c] The perimeter of the equilateral traingle whose side length L cm. is .... cm. (L + 3 or $\frac{1}{3}$ L or L – 3 or 3 L)

[d] $x + 8 = 15$, $x \in \mathbb{N}$, then x = ... (3 or 7 or 6 or 5)

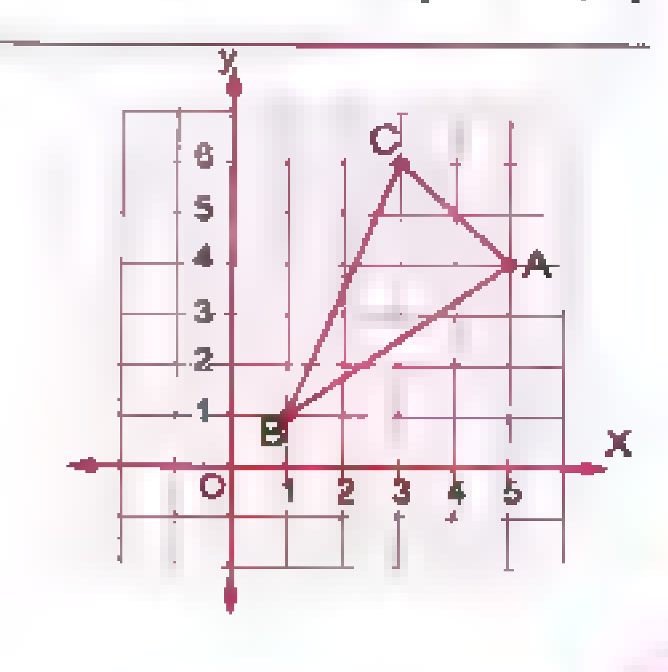
3 [a] ***Solve :***

(1) $y - 3 = 9$ where $y \in \mathbb{N}$ (2) $2x + 9 = 21$ where $x \in \mathbb{N}$

[b] Find the circumference of a circle with diameter length 14 cm. $(\pi = \frac{22}{7})$

4 [a] From the opposite graph , complete :

A (.......... , ...)
B (.......... , ...)
C (.......... , ...)



[b] Find the area of rhombus whose side length 12 cm. and its height 10 cm.

5 [a] Translate the statement into an equation :

If 9 is subtracted from a number , then the result is 23

[b] ***Represent the following data by histogram :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	3	7	5	6	21

Additional question

Complete :

[a] If A , B , C are natural numbers , then (A × B) × C = A × (B × C) called .... property.

[b] 91 × (73 + 27) = 91 × .... = ...

[c] The smallest natural number is ....

[d] The additive neutral element in ℕ is ....

25 Assiut Governorate

Assiut Educational Zone
Al-Tahrer Language School



Answer the following questions :

1 ***Choose the correct answer :***

[a] If $x + 3 = 5$, $x \in \mathbb{N}$, then $x =$ .... (1 or 2 or 3 or 4)

[b] The area of rhombus whose diagonals length are 6 cm. and 8 cm. is .... cm². (48 or 12 or 24 or 40)

[c] If the longest chord in a circle is 7 cm. then the circumference of the circle is .... cm. where $\pi = \frac{22}{7}$ (3.7 or 7 or 22 or 44)

[d] The difference between two numbers is 5 , the smaller one is y the then greater number is .... (5 y or 5 – y or y – 5 or y + 5)

2 ***Complete :***

[a] Area of parallelogram = ... × ....

[b] The number of axes of symmetry of the rectangle = ...



[c] The rhombus whose area is 36 cm^2 and the length of one of its diagonals is 8 cm. then the length of the other diagonal = ... cm.

[d] Shorouk saved x pounds , her father gave her 10 pounds then she has ....

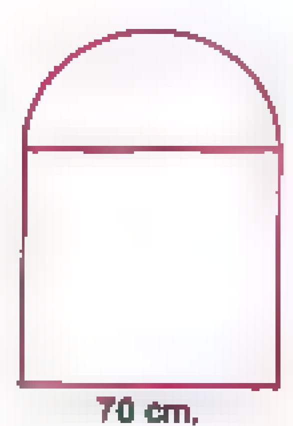
3 [a] Solve the equation : $2x + 9 = 21$, $x \in \mathbb{N}$

[b] *In the opposite figure :*

There is a window which has the form of a square , whose side length is 70 cm. , and above it , there is a semicircle.

(1) Calculate the perimeter of the window.

(2) If the area of the semicircle is 3850 cm^2 , find the area of the window.



4 [a] ***Which is greater in area ?*** a square whose diagonal length is 10 cm. or a right angled triangle whose legs are 8 cm. and 6 cm.

[b] Find the number which if added to 3 , the sum will be 9

5 [a] In the cartesian co-ordinates plane , determine the points A (2 , 2) , B (4 , 2) , C (4 , 8) and D (2 , 8) If $\overleftrightarrow{BC}$ is the axis of reflection of the figure ABCD , determine the image of the figure ABCD

[b] ***The following table shows the frequency distribution of the number of work hours of 50 workers. Graph these data using the frequency polygon :***

Sets	2 –	4 –	6 –	8 –	10 –	Total
Frequency	8	9	15	16	2	50

Additional question

Choose the correct answer :

[a] $\frac{5}{7}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[b] If X = {a : a $\in \mathbb{N}$, 4 < a < 5} , then X = ...

({4} or {5} or {4 , 5} or $\varnothing$)

[c] The set of even numbers (E) $\cap$ the set of prime numbers (P) = ...

(P or {0} or $\mathbb{N}$ or {2})

[d] The sum of two natural numbers .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

26 Souhag Governorate

Directorate of Education
Directorate of Official Language Schools



Answer the following questions :

1 Choose the correct answer :

[a] The area of rhombus whose diagonals lengths are 6 cm. and 8 cm. is .... cm^2 (48 or 12 or 24 or 40)

[b] If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. where $\left(\pi = \frac{22}{7}\right)$ (3.5 or 7 or 22 or 44)

[c] The number of axes of symmetry of rhombus equals .... (zero or 1 or 2 or 4)

[d] Twice the number x subtracted 7 from it = ... ($7 - x$ or $2x - 7$ or $7x + 2$ or $14x$)

2 Complete the following :

[a] The perimeter of square whose side length is 10 = ... cm.

[b] Area of the triangle = $\frac{1}{2}$ the length of its base × ....

[c] The side length of a square is 5 cm. , then its area = ... cm^2

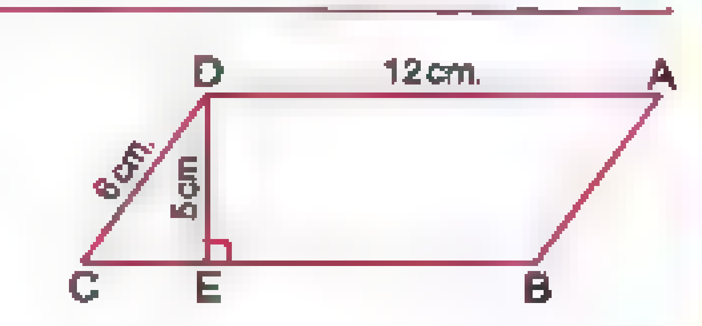
[d] The number of symmetry axes of an equilateral triangle = ...

3 [a] ***Solve each of the following equation :***

(1) $2x + 8 = 14$ (2) $x - 7 = 25$

[b] Find the area of a triangle whose base length is 5 cm. and the corresponding height is 6 cm.

4 [a] ***In the opposite figure :***



ABCD is a parallelogram where AD = 12 cm. , CD = 6 cm. , ED = 5 cm. and $\overline{ED} \perp \overline{BC}$

Find the area of the parallelogram.

[b] Graph the figure ABCD where A (2 , 7) , B (3 , 4) , C (8 , 4) and D (7 , 7) What is the name of the figure ABCD ?

5 *The following table shows the frequency distribution of the number of work hours of 50 workers :*

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represent these data.

Additional question

[a] Write in the list method the set : $X = \{x : x \in \mathbb{N}, 3 \leq x \leq 8\}$, then represent its element on the number line.

[b] Use the properties of addition to find the result of the following :
82 + 75 + 18

27 Aswan Governorate

Aswan Educational Directorate
Edfu Language School



Answer the following questions :

1 ***Choose the correct answer from those given :***

[a] The number of axes of symmetry of the rhombus is .... (1 or zero or 2 or 4)

[b] If $3x = 15$, then $x =$ .... (5 or 12 or $\frac{1}{5}$ or $\frac{1}{3}$)

[c] $\frac{1}{2}$ ☐ $\frac{1}{8}$ .... (< or = or >)

[d] The circle in which the length of the greatest chord is 14 cm. , its circumference = ... $(\pi = \frac{22}{7})$ (3.5 or 14 or 22 or 44)

2 ***Complete each of the following :***

[a] Area of square = $\frac{1}{2}$ × .... × ....

[b] The measure of a right angle = ...

[c] If we add 5 to three times of the number y , then we get the number ....

[d] The square whose diagonal length is 10 cm. , its area is .... cm^2

3 [a] ABC is a triangle , its base length is 18 cm. and its height is 6 cm. , then find its area.

[b] ***Which is greater in area ?*** a rhombus the lengths of its diagonals are 8 cm. , 6 cm. , or the parallelogram in which the length of its base is 10 cm. and the corresponding height is 5 cm.

4 [a] ***Solve the following equation :*** $x + 3 = 12$

[b] In a coordinate plane, draw Δ ABC where A (2 , 3) , B (5 , 3) and C (5 , 7) , then draw the image of Δ ABC by reflection across $\overleftrightarrow{BC}$

5 [a] The parallelogram whose area is 36 cm^2 and the length of a side of it is 9 cm. , then find the corresponding height to this side.

[b] ***The following table shows the frequency distribution of the number of work hours of 50 workers :***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency histogram and frequency polygon which represent these data.

Additional question

Complete :

[a] The set of natural numbers more than 5 is ....

[b] 2 , 7 , 12 , 17 , ... , ... (in the same pattern)

[c] If A × 60 + A × 4 = 3 × 64 , then A = ...

[d] The multiplicative neutral element in ℕ is ....

28 South Sinai Governorate — Dahab Educational Directorate



Answer the following questions :

1 ***Choose the correct answer :***

[a] The perimeter of square with side length x = ...

($4x$ or $x + 4$ or $\frac{x}{4}$ or $x - 4$)

[b] 6 added to the number y is .... ($6y$ or $y + 6$ or $y - 6$ or $\frac{y}{6}$)



[c] If $x + 8 = 15$, then $x =$ .... (3 or 7 or 6 or 5)

[d] The number of axes of symmetry of rhombus = ...

(zero or 1 or 2 or 4)

2 ***Complete the following :***

[a] The area of parallelogram = ... × ....

[b] The area of triangle whose base length 8 cm. and height 5 cm.
= .... cm^2

[c] The place value of the digit 3 in the number 6.135 is ....

[d] If x is odd number then $x + 2$ is ...... number.

3 [a] Find the circumference of a circle with diameter length 7 cm. $\left(\pi = \frac{22}{7}\right)$

[b] Complete : If $15 \times 34 = (5 + 10) \times x$, then $x =$ ....

[c] Solve the equation : $3x + 7 = 19$

4 [a] In the Cartesian coordinate plane determine the following points
A (6 , 6) , B (6 , 2) , C (1 , 2) and D (1 , 6)
What's the name of the figure ?

[b] Find the area of rhombus whose diagonals lengths are 6 cm. and 8 cm.

5 ***The following table shows the marks of 35 students in math exam :***

Sets	10 –	20 –	30 –	40 –	total
Frequency	8	12	10	5	35

Represent these data by frequency polygon.

Additional question

Using the properties of commutation , distribution and associative in $\mathbb{N}$, find the value of each of the following :

(1) $8 \times 184 \times 125$ (2) $28 + 59 + 72 + 41$

(3) $137 \times 36 - 37 \times 36$

29 Red Sea Governorate

Quesseir Educational Administration



Answer the following questions :

1 Complete :

[a] The number of axes of symmetry of the rhombus = ...

[b] The perimeter of an equilateral triangle whose side length is L = ...

[c] If $4 + x = 15$, then $x =$ ....

[d] The circle whose diameter length is 10 cm. , its circumference = ... cm. (where $\pi = 3.14$)

2 Choose the correct answer :

[a] The triangle whose base length is 5 cm. , and the corresponding height of it is 6 cm. , its area = ... cm^2 (30 or 15 or 25 or 36)

[b] If $3x = 15$, then $x =$ .... (5 or 12 or $\frac{1}{5}$ or $\frac{1}{3}$)

[c] Twice the number x subtracted 3 from it = ...

($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

[d] The square whose diagonal length is 8 cm. its area = ... cm^2

(64 or 32 or 16 or 8)

3 [a] Find the area of a rhombus in which the length of its diagonals are 8 cm. and 6 cm.

[b] Solve the following equation : $x + 3 = 13$

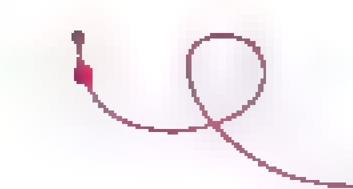
4 [a] Find the area of a parallelogram in which the length of the base = 10 cm. , and its height = 5 cm.

[b] In the coordinate plane draw the triangle ABC where A (2 , 5) , B (5 , 2) and C (5 , 8) , then draw the image of the triangle ABC by reflection across $\overleftrightarrow{BC}$

5 ***The following frequency table shows the marks of 35 students in the exam :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	8	12	10	5	35

Draw the frequency polygon which represents these data.



Additional question

Choose the correct answer :

[a] $\{3 , \frac{15}{4}\}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[b] The set of odd numbers .... the set of natural numbers.

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

[c] If x is an odd number , then $x + 2$ is .... number

(odd or even or prime)

[d] If $7 \times 15 = 15 \times a$, then a = ... (15 or 7 or 10 or 5)

30 Matrouh Governorate

Matrouh Educational Directorate
Maths Inspection



Answer the following questions :

1 Complete the following :

[a] If a radius of circle is (r) , then the circumference of a circle = $\pi \times$ ....

[b] The sum of two number is 21 and one of them is x , then the other is ....

[c] If $7 \times 15 = 15 \times x$, then x = ...

[d] Area of parallelogram = ...

[e] If the diagonal length of a square is 10 cm. , then its area = ... cm^2

2 Choose the correct answer between brackets :

[a] If the diagonals lengths of a rhombus 10 cm. , 12 cm. , then its area = ... cm^2 (120 or 60 or 24 or 32)

[b] Subtract 7 from double number x ....

($x - 7$ or $2x - 7$ or $7x + 2$ or $14x$)

[c] Area of triangle in which the length of its base is 12 cm. and its height is 5 cm. = ... cm^2 (30 or 60 or 17 or 34)

[d] The diameter of circle = ... (r or 3 r or 4 r or 2 r)

[e] If $x + 8 = 15$, then x = ... (3 or 7 or 6 or 5)

3 [a] Find the area of a parallelogram in which length of its base is 15 cm. and its corresponding height is 4 cm.

[b] ***Find the value of x which make the following equation correct :***

(1) $x - 3 = 9$

(2) $2x + 5 = 17$

---

4 ***In the coordinate plane :***

[a] Determine the position of the points A (8 , 5) , B (8 , 2) , C (5 , 2) , D (5 , 7)

[b] Draw line segments $\overline{AB}$, $\overline{AD}$, $\overline{CD}$, $\overline{BC}$

[c] If $\overleftrightarrow{CD}$ is a reflection axis of shape ABCD, find its image using the suitable symbole.

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5 ***The following table shows marks of 40 students in math exam :***

Sets	10 –	20 –	30 –	40 –	50 –	sum
Frequency	5	7	12	9	7	40

Represent these data by histogram and frequency polygon.

Additional question

Use the properties of operations of natural numbers to find the result :

(1) $8 \times 47 \times 125$

(2) $56 \times 42 + 56 \times 58$

Final Examinations

Some Schools' Examinations From Different Governorates



El-Nozha Directorate of Education
Our Lady of Perpetual Succour School

Answer the following questions :

1 *Complete the following :*

(a) If $X = \{x : x \in \mathbb{N}, 2 \leq x \leq 3\}$, then $X = \{\cdots\cdots\}$

(b) The square whose area is 72 cm^2, the length of its diagonal = ……… cm.

(c) 1 , 4 , 8 , 13 , ……… (in the same pattern)

(d) If $945 = (x \times 100) + 45$, then $x = \cdots\cdots$

2 *Choose the correct answer :*

(a) If E is the set of even number then E ……… $\mathbb{N}$

($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(b) The multiplicative neutral element in N is ………

(zero *or* 1 *or* 2 *or* 4)

(c) The area of a triangle whose base length 5 cm. and the corresponding height 6 cm. is ……… cm^2. (30 *or* 15 *or* 25 *or* 36)

(d) If the longest chord in a circle is 7 cm. then the circumference of the circle is ……… cm. where. $\left(\pi = \frac{22}{7}\right)$ (3.5 *or* 7 *or* 22 *or* 44)

3 (a) ***Use the properties of operations to find the result of :***

(1) $38 + 47 + 62 + 53$ (2) $8 \times 37 \times 125$

(b) Draw Δ ABC where A (2 , 5) , B (5 , 2) , C (5 , 8)

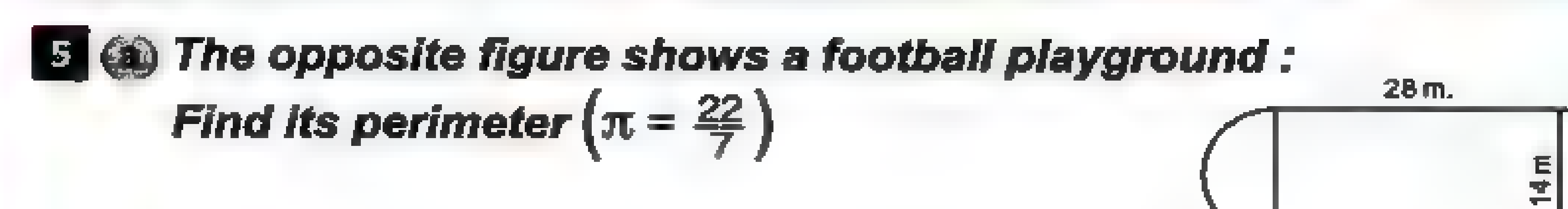
Then find its image by reflection on $\overleftrightarrow{BC}$

4 (a) ***Which is greater in area :***

A rhombus in which the lengths of its diagonals are 8 cm. and 6 cm. or a parallelogram in which the length of its base is 10 cm. and the corresponding height is 5 cm. then calculate the difference between them.

(b) ***Solve each of the following equations :***

(1) $\frac{1}{6}x - 3 = 2$ (2) $3x + 7 = 19$



5 (a) ***The opposite figure shows a football playground :***

Find its perimeter $\left(\pi = \frac{22}{7}\right)$

(b) ***Represent the following distribution by histogram :***

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	6	5	12	8	9	40



2 Cairo

Nasr City Directorate
Talaee El-Kamal Islamic Language School

Answer the following questions :

1 ***Choose the correct answer :***

(a) Subtract 3 from twice the number x = ⋯⋯⋯

($x - 3$ or $2x + 3$ or $2x - 3$)

(b) The number of axes of symmetry of the rhombus = ⋯⋯⋯

(0 or 1 or 2 or 4)

(c) If the set of even number is E , then E ⋯⋯⋯ $\mathbb{N}$

($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(d) The diameter length of circle whose circumference 88 cm. = ⋯⋯⋯ $\left(\pi = \frac{22}{7}\right)$

(28 or 14 or 7 or 21)

2 ***Complete the following :***

(a) The set of prime numbers which are less than 17 is ⋯⋯⋯

(b) If $x + 8 = 15$, $x \in \mathbb{N}$, then x = ⋯⋯⋯

(c) The area of a triangle whose base length 5 cm. and the corresponding height 6 cm. is ⋯⋯⋯ cm^2.

(d) The multiplicative neutral element in $\mathbb{N}$ is ⋯⋯⋯

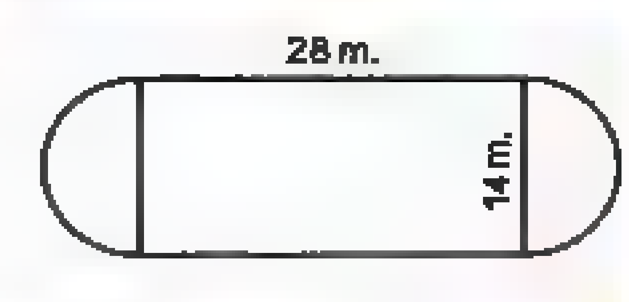
3 (a) ***Use the distribution property to find the value of :***

(1) 519×99 (2) 316×1001

(b) ***Which is greater in area :***

A rhombus in which the lengths of its diagonals are 6 cm. and 8 cm. or a parallelogram in which the length of its base is 10 cm. and the corresponding height is 5 cm. , then calculate the difference between them.

4 (a) ***Calculate the perimeter of the opposite figure where*** $\left(\pi = \frac{22}{7}\right)$



(b) In the cartesian co-ordinate plane draw the figure ABCD where A (8 , 5) , B (8 , 2) , C (5 , 2) , D (5 , 7). If CD is the axis of reflection of the figure ABCD Draw the image of the figure ABCD.

---

5 (a) ***Solve each of the following equations :***

(1) $\frac{1}{6}x - 3 = 2$ (2) $2x + 9 = 21$

(b) ***The table below shows the frequency distribution of the number of work hours of 50 workers.***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represents these data.



El-Khalifa & Mokattam Educational Zone
Sama Language School

Answer the following questions :

1 ***Complete the following :***

(a) If : A (2 , 3) and B (2 , 7) , then the midpoint of $\overline{AB}$ is (……… , ………)

(b) The additive neutral element in $\mathbb{N}$ is ………

(c) If $x + 8 = 15$, $x \in \mathbb{N}$, then x = ………

(d) 74 (73 + 27) = 74 × ……… = ………

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2 ***Choose the correct answer :***

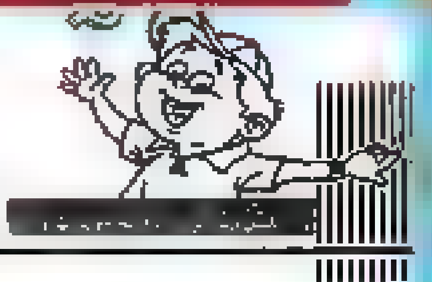
(a) 3 + 9 ……… $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(b) If : X = $\{x : x \in \mathbb{N} , 2 \le x \le 3\}$, then X = {………}
({3 , 2} *or* {3} *or* {2} *or* $\varnothing$)

(c) A rhombus in which the length of its diagonals are 10 cm. and 12 cm. , its area = ……… cm². (120 *or* 60 *or* 24 *or* 32)

(d) The opposite figure :  represents ………

(reflection *or* translation *or* rotation)



3 (a) (1) ***Evaluate using the commutative and associative properties :***

$8 \times 137 \times 125$

(2) ***Use the distributive property to find the value of :*** 36×1001

(b) ***Solve each of the following equations :***

(1) $x + 7 = 19$, $x \in \mathbb{N}$ (2) $3x = 21$, $x \in \mathbb{N}$

---

4 (a) ***Which is greater in area :***

A square whose diagonal length is 10 cm. or a triangle whose base length is 12 cm. and its corresponding height is 6 cm.

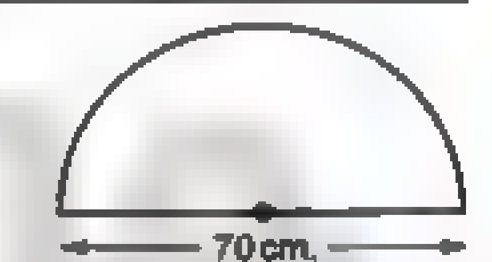
(b) ***In the 2-dimensional coordinate plane locate the points :***

A (5 , 0) , B (9 , 0) , C (9 , 4) , D (5 , 4) , name the shape ABCD then find its image by reflection in $\overleftrightarrow{DC}$

---

5 (a) ***Find the perimeter of the opposite figure***

$\left(\pi = \frac{22}{7}\right)$



(b) ***The following frequency table shows the marks of 35 students in the mathematics exam. Graph these data using the frequency polygon.***

Sets	5 –	10 –	15 –	20 –	25 –	Total
Frequency	5	9	11	6	4	35

4 Cairo

El-Salam Educational Zone
Anwar El-Sadat E.L.S.

Answer the following questions :

1 ***Choose the correct answer :***

(a) The number of axes of symmetry of the rhombus = ... (0 or 1 or 2 or 4)

(b) If : $x + 2 = 5$, $x \in \mathbb{N}$, then x = ... (2 or 3 or 5 or 4)

(c) $\mathbb{N}$ – E = ... ($\mathbb{N}$ or O or E or P)

(d) $39 \times 115 = 39 \times 100 + 39 \times$ .... (115 or 10 or 5 or 15)

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2 ***Complete the following :***

(a) 1000 , 100 , 10 , ... , ... (In the same pattern)

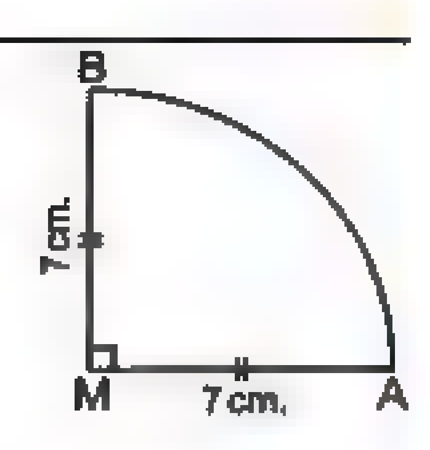
(b) If : (4 , 7) = (2 a , b – 1) , then a = ... , b = ...

(c) If we subtract 7 from twice the number x = ...

(d) The height of parallelogram with area 40 cm^2 and base length 5 cm. is ....

3 (a) ***Calculate the perimeter of the figure***

$(\pi = \frac{22}{7})$



(b) ***Use operations properties in ℕ to find :***

25 × 781 × 4

4 (a) ***Solve the equation :*** $3x + 8 = 29$, $x \in ℕ$

(b) ***Find the area of the square whose perimeter is 20 cm.***

5 (a) In a coordinate plane represent the points A (2 , 3) , B (3 , 5) , C (5 , 3)
Find the image of Δ ABC by reflection in $\overleftrightarrow{AC}$

(b) ***Represent by frequency polygon :***

Sets	10 –	20 –	30 –	40 –	50 –
Frequency	6	5	12	8	9

5 Cairo

Helwan Educational Department
Elias Language School for Boys

Answer the following questions :

1 ***Complete the following :***

(a) 18 × 15 = 15 × .... (.......... property)

(b) If "A" is an odd number , then "A + 2" is .... number.

(c) If $3x = 45$, then x = ...

(d) 20 , 19 ,17 , 14 , ... (in the same pattern)

2 ***Choose the correct answer :***

(a) A square of diagonal length 12 cm. , its area = ... cm^2

(120 *or* 144 *or* 72 *or* 36)

(b) The multiplicative neutral element in ℕ is ....

(2 *or* 1 *or* zero *or* 10)



(c) The smallest even counting number is ·········

(zero **or** 1 **or** 2 **or** 4)

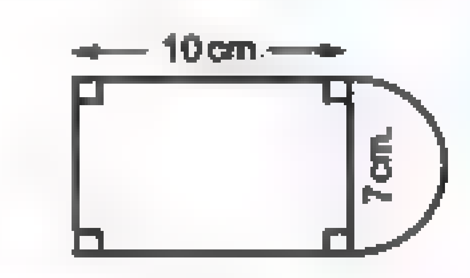
(d) Ali is "b" years old , then his age after 3 years is ·········

(b + 3 **or** b – 3 **or** 3b **or** 3 – b)

3 (a) ***Solve in ℕ :*** (1) $x - 3 = 7$ (2) $2x + 9 = 21$

(b) ***Which is greater in area :*** A parallelogram of base length 8 cm. and height 6 cm. , or a triangle of base length 10 cm. and height 8 cm.

4 (a) ***Find perimeter of the following figure*** $\left(\pi = \frac{22}{7}\right)$



(b) In the coordinate plane , draw the triangle XYZ , in which X (2 , 4) , Y (5 , 2) and Z (5 , 6) , then find its image by reflection in $\overleftrightarrow{YZ}$

5 (a) ***Use properties in ℕ to Find :***

(1) 25 × 19 × 4 (2) 12 × 105 (using distribution property)

(b) ***Represent the following data by the frequency polygon :***

Sets	2 –	4 –	6 –	8 –
Frequency	8	9	5	11

6 Cairo

Rod El-Farag Directorate
El-Sayeda Aisha Language School

Answer the following questions :

1 ***Choose the correct answer :***

(a) The sum of two natural number ········· ℕ (⊂ **or** ⊄ **or** ∈ **or** ∉)

(b) If $3x = 15$, $x \in \mathbb{N}$, then $x =$ ········· (5 **or** 12 **or** $\frac{1}{5}$ **or** $\frac{1}{3}$)

(c) The circumference of a circle with diameter 21 cm. is ········· $\left(\pi = \frac{22}{7}\right)$

(128 **or** 32 **or** 66 **or** 1024)

(d) The number of axes of symmetry of the rhombus = ·········

(1 **or** 2 **or** 3 **or** 4)

2 ***Complete the following :***

(a) The additive neutral element in ℕ is = ·········

(b) The multiplicative neutral element in the natural numbers plus 99 ·········

(c) Double the number x subtracted 7 from it equal ....

(d) The length of the diagonal of a square is 12 cm. then its area = ... cm^2.

3 (a) ***Using the properties of commutation , distribution and associative , find the value of each :*** (1) $8 \times 137 \times 125$ (2) $28 + 59 + 72$

(b) ***Solve the equation :*** $2x + 9 = 21 \quad x \in \mathbb{N}$

4 (a) The opposite figure ABCD is a parallelogram , AB = 10 cm. , DE = 12 cm. , DF = 8 cm. . ***Find***

(1) The area of parallelogram ABCD

(2) Length of $\overline{BC}$

D A 12 cm. 8 cm. 10 cm. E C F B

(b) In the cartesian co-ordinates plane determine the point A (2 , 2) , B (5 , 2) , C (5 , 8) , D (2 , 8). If $\overleftrightarrow{BC}$ the axis of reflection of the figure ABCD , then determine the image of the figure ABCD

5 (a) ABCD is a rectangle of area 828 cm^2 , E $\in \overrightarrow{BC}$, AD = 23 cm. , BE = 35 cm. , Find the area of Δ DCE

D A E C B

(b) ***The following table shows the marks of pupils in mathematics exam :***

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	5	7	12	A	7	40

(1) Find the value of A

(2) Draw the frequency histogram which represent these data

7 Cairo

El-Mostakbal Educational Zone
E.L.S.

Answer the following questions :

1 ***Choose the correct answer :***

(a) {3.5} .... $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(b) The sum of twice a number and 6 = ...

($x + 6$ *or* $2x + 6$ *or* $\frac{1}{2}(x + 6)$ *or* $2(x + 6)$)

(c) The number of axes of symmetry of the square is .... axes.
(2 or 3 or 4 or 5)

(d) The circumference of circle = ...
(π r or 2 π r or 3 π r or 4 π r)

2 ***Complete the following :***

(a) 26 , 20 , 15 , 11 , ... , ... (in the same pattern)

(b) 40 × 115 = 39 × 115 + 115 × ....

(c) If the area of a parallelogram is 40 cm^2 and its base 8 cm. then its corresponding height equals .... cm.

(d) If $x \times 5 = 15$, then $2x$ = ...

3 (a) ***By using properties of addition find :*** 137 + 475 + 163 + 225

(b) ***Solve the following equation :*** $2x - 7 = 5$ (Where $x \in \mathbb{N}$)

4 (a) ***Which is greater in area :*** A rhombus whose diagonal lengths are 12 cm. and 16 cm. or a square whose diagonal length is 14 cm. (show your steps).

(b) On the coordinate plane draw the rectangle ABCD where A (1 , 1) , B (4 , 1) , C (4 , 5) and D (1 , 5) , then draw its image by reflection in $\overleftrightarrow{BC}$

5 (a) Calculate the circumference of the circle whose diameter is 14 cm. $\left(\pi = \frac{22}{7}\right)$

(b) ***Represent the following distribution by frequency polygon :***

Sets	5 –	15 –	25 –	35 –	45 –
Frequency	6	8	12	7	4

8 Cairo — New Cairo Directorate Experimental School

Answer the following questions :

1 ***Choose the correct answer :***

(a) $\frac{2}{3}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\not\subset$ or $\subset$)

(b) If : $x + 1 = 6$, then $3x$ = ... (5 or 7 or 15 or 51)

(c) The diagonal length of a square is 6 cm. then its area is .... cm^2.
(6 or 16 or 18 or 36)

(d) The difference between twice a number x and 8 = ...
($8 - 2x$ or $2x - 8$ or $\frac{1}{2}x - 8$ or $x - 8$)

2 ***Complete the following :***

(a) $3 \times (2 + 5) = 3 \times$ .... $+ 3 \times$ ....

(b) The rhombus has .... lines of symmetry.

(c) The smallest natural number is ....

(d) A circle of radius length 7 cm. then its circumference = ... cm.

3 (a) ***Use the properties of multiplication to calculate the value :***
$125 \times 19 \times 8$

(b) If we subtracted 5 from three times a number the result will be 7
What's the number ?

4 (a) ***Which is greater in area :*** A triangle whose base length 18 cm. and height 12 cm. or a rhombus with diagonals lengths 24 cm. and 8 cm.

(b) Draw the figure ABCD in the coordinate plane where A (1 , 2) , B (1 , 5) , C (4 , 5) , D (4 , 2).

(1) What is the name of the figure ABCD ?

(2) How many lines of symmetry of this figure ?

5 (a) ***Find the radius length of circle whose circumference 154 cm.*** $\left(\pi = \frac{22}{7}\right)$

(b) ***The following table shows the marks of 50 pupils.***

Sets	2 –	4 –	6 –	8 –	10 –
Frequency	10	9	12	8	11

Represent these data by histogram.

9 Giza

North Giza Educational Zone
Gawad Hossny School

Answer the following questions :

1 ***Complete the following :***

(a) The set of natural numbers less than 5 is ....

(b) If : $7 \times 15 = 15 \times x$, then $x =$ ....

(c) Area of square = $\frac{1}{2} \times$ ....

(d) The number of symmetry axes of an equilateral triangle is ....



2 ***Choose the correct answer :***

(a) (3 + 9) .... $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(b) The set of even numbers .... the set of natural numbers.
($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(c) x is an odd number , then $x + 2$ is .... number.
(even *or* odd *or* prime *or* otherwise)

(d) A rhombus of diagonals length 10 cm. and 12 cm. its area = ... cm^2
(120 *or* 60 *or* 24 *or* 32)

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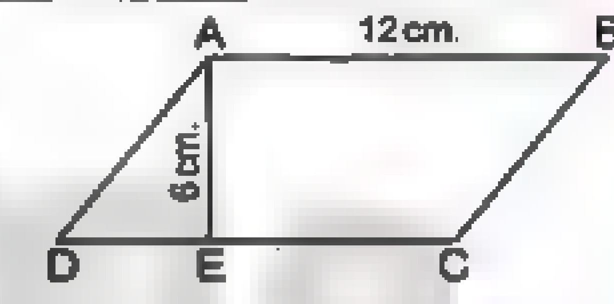
3 (a) ***Solve :*** $2x + 9 = 21$, where $x \in \mathbb{N}$

(b) ***Using the properties of addition in $\mathbb{N}$ to find :*** 872 + 199 + 128 + 801

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4 (a) ***From the opposite figure :***

Find the area of the parallelogram ABCD



(b) Graph the figure ABCD where A (2 , 7) , B (3 , 4) , C (8 , 4) and D (7 , 7)
What is the name of the figure ABCD ?

---

5 (a) Find the circumference of the circle with diameter length 14 cm. $\left(\pi = \frac{22}{7}\right)$

(b) ***Represent the following distribution by frequency polygon :***

Sets	10 –	20 –	30 –	40 –	50 –
Frequency	5	7	12	9	7

10 Giza

El-Doki Directorate
El-Orman Ex. Language School

Answer the following questions :

1 ***Complete the following :***

(a) The multiplicative identity element in $\mathbb{N}$ is ....

(b) For any natural numbers a , b and c where $(a \times b) \times c = a \times (b \times c)$ this called .... property.

(c) If the side length of a square is 10 cm. then its area ....

(d) $23 \times (92 + 8) = 23 \times$ .... = ...

(e) The area of a parallelogram whose base length is 8 cm. and height 2.5 cm. is .... cm^2.

2 ***Choose the correct answer :***

(a) If the longest chord in a circle is 7 cm. , then the circumference of the circle is .... cm. where $\left(\pi = \frac{22}{7}\right)$ (3.5 or 7 or 22 or 44)

(b) If : $x + 7 = 19$, $x \in \mathbb{N}$ then $x =$ .... (26 or 12 or 11 or 13)

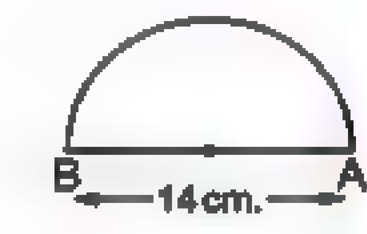
(c) The area of a square whose diagonal length 6 cm. is .... (18 cm^2 or 36 cm^2 or 12 cm.)

(d) If : $3x = 15$, $x \in \mathbb{N}$ then $x =$ .... (5 or 12 or $\frac{1}{5}$ or $\frac{1}{3}$)

(e) $(49 + 8)$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

3 ***Use the properties to find the value of :*** 28 + 78 + 782

4 ***In the opposite figure :***



The length of the diameter $\overline{AB}$ of a semicircle is 14 cm.

Find the distance around the figure $\left(\pi = \frac{22}{7}\right)$

5 ***Represent these data by the frequency polygon :***

Sets	5 –	10 –	15 –	20 –	25 –
Frequency	6	12	19	12	4

11 Giza

South Giza Educational Zone
Mathematics Department

Answer the following questions :

1 ***Choose the correct answer :***

(a) The area of a rhombus whose diagonal lengths are 3 cm. and 4 cm. is .... cm^2 (24 or 6 or 12 or 20)

(b) If : $x + 8 = 12$, $x \in \mathbb{N}$ then $x =$ .... (4 or 12 or 20 or 64)

(c) 1 , 4 , 9 , 16 , ... (in the same pattern) (19 or 23 or 25 or 32)

(d) $\frac{24}{4}$ .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

2 ***Complete the following :***

(a) The sum of two numbers is 35 , one of them is x then the other is ....

(b) The least natural number is ....

(c) 53 + 48 + 47 = (53 + ...) + 48 = ...

(d) If x is an even number , then $x + 3$ is .... number.



3 (a) ***Solve the equation :*** $2x + 9 = 21$, $x \in \mathbb{N}$

(b) Write by the listing method $X = \{x : x \in \mathbb{N} , 3 < x < 8\}$ then represent its elements on the number line.

4 (a) The diagonal length of a square is 6 cm. ***Find its area.***

(b) In a 2-dimensional coordinate plane. Draw the point A (2 , 2) , B (5 , 2) , C (5 , 8) and D (2 , 8)

5 (a) Find the circumference of a circle. If its diameter is 7 cm. $\left(\pi = \frac{22}{7}\right)$

(b) ***The following table shows the frequency distribution of the number of work hours of 50 workers.***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represents these data.



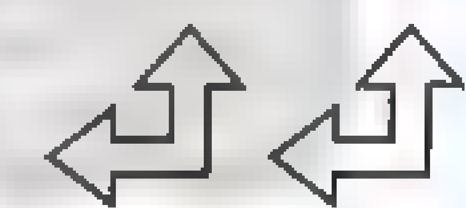
12 Giza — Abo El-Nomros Zone E.L.S.

Answer the following questions :

1 ***Choose the correct answer :***

(a) $\frac{1}{5}$ .... $\mathbb{N}$ $(\in$ or $\notin$ or $\subset$ or $\not\subset)$

(b) The opposite geometric transformation is ....



(reflection or translation or rotation)

(c) Youssef is x years old , then Youssef's age after 2 years will be ....

($2x$ or $2 - x$ or $x + 2$ or $x - 2$)

(d) The circumference of a circle with diameter length 42 cm. is .... cm. Where $\left(\pi = \frac{22}{7}\right)$ (48 or 96 or 168 or 132)

2 ***Complete the following :***

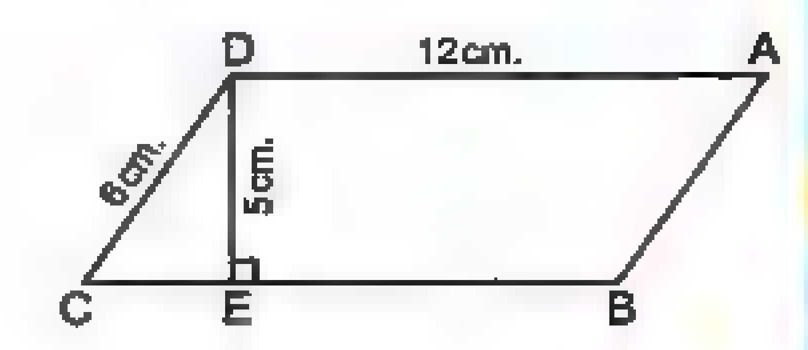
(a) If : $x + 4 = 10$, then $x =$ ....

(b) 1 , 3 , 9 , ... , ... (in the same pattern)

(c) The additive identity element is ....

(d) The number of axes of symmetry of the rectangle = ...

3 (a) ***In the opposite figure :***



ABCD is a parallelogram ,

where AD = 12 cm. , ED = 5 cm.

Find the area of the parallelogram.

(b) ***Using the additive properties find the result :*** 38 + 47 + 62 + 53

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4 Draw the triangle ABC where A (1 , 3) , B (4 , 1) , C (4 , 7) ,
then draw the image of the triangle ABC by reflection in $\overleftrightarrow{BC}$

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5 (a) ***Solve the equation :*** $2x - 4 = 12$

(b) ***Represent the following data by the histogram :***

Sets	5 –	7 –	9 –	11 –
Frequency	4	12	9	1

13 Alexandria

Central Educational Zone
E.L.S.

Answer the following questions :

1 ***Choose the correct answer :***

(a) If : $x + 8 = 15$, $x \in \mathbb{N}$ then $x = \cdots\cdots$ (23 *or* 7 *or* 6 *or* 5)

(b) The square whose diagonal length is 8 cm. , its area = ········· cm^2.

(64 *or* 32 *or* 16 *or* 8)

(c) If : $X = \{x : x \in \mathbb{N} , 3 \leq x < 5\}$, then $x \in \cdots\cdots$

({4} *or* {3} *or* {3 , 4} *or* {4 , 5})

(d) $24 \times 10 = 24 \times 6 + 24 \times \cdots\cdots$ (24 *or* 6 *or* 10 *or* 4)

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2 ***Complete the following :***

(a) The set of prime numbers which are less than 17 is ··········

(b) The perimeter of a rectangle is 16 cm. its width is 3 cm. then its area = ·········· cm^2.

(c) The sum of two numbers is 35 , one of them is x , then the other is ·········

(d) A rhombus has two diagonals of length 6 cm. and 8 cm. , then its area = ·········· cm^2.



3 (a) ***Using the properties of commutation and association find the value of each of the following :*** (1) 28 + 59 + 72 (2) 8 × 137 × 125

(b) In the cartesian co-ordinate plane locate the points A (2 , 1) , B (5 ,1) , C (5 , 4) , then draw the image of Δ ABC by reflection on $\overleftrightarrow{BC}$

4 ***In the opposite figure :***

ABCD is a parallelogram in which BC = 14 cm. , BE = 6 cm. , M is the mid-point of $\overline{AD}$. ***Find :***

(a) The length of $\overline{AD}$ and $\overline{AM}$
(b) The area of parallelogram ABCD
(c) The area of Δ ABM
(d) The area of the figure MBCD

5 (a) ***Solve the following equation :*** $2x + 9 = 21$, $x \in \mathbb{N}$

(b) ***The following table shows the frequency distribution of the number of work hours of work.***

Sets	20 –	30 –	40 –	50 –	60 –	Total
Frequency	6	10	14	7	3	40

Draw the frequency polygon which represent these data.



14 Alexandria
El-Montazah Educational Zone
Maths Supervision

Answer the following questions :

1 ***Complete the following :***

(a) 8 × ········ = ········ × 8 = 32 (b) If : a ∈ ℕ , and b ∈ ℕ , then a × b ········ ℕ

(c) If : $x \in \mathbb{N}$, $2x - 3 = 7$, then x = ········

(d) The area of a square whose side length is 8 cm. = ········ cm^2.

2 ***Choose the correct answer :***

(a) 3.5 ········ ℕ (∈ or ∉ or ⊂ or ⊄)

(b) (7 × 2) × 4 = ········ × (2 × 4) (3 or 5 or 7 or 9)

(c) If the diameter of a circle is 7 cm. , then the circumference = ········ cm. $\left(\pi = \frac{22}{7}\right)$ (11 or 22 or 44 or 66)

(d) The sum of two numbers 9 , one of them is x then the other is ········ ($x - 9$ or $\frac{1}{9}x$ or $9x$ or $9 - x$)

3 (a) ***Use the distributive property of multiplication over addition to complete :*** $50 \times 8 + 50 \times 7 = 50$ (.......... + ...) = $50 \times$ .... = ...

(b) The lengths of the diagonals of a rhombus are 30 cm. and 20 cm. Calculate its area.

4 (a) In the coordinate plane , draw the figure ABCD where A (3 , 1) , B (3 , 5) , C (7 , 5) and D (7 , 1) , ***what is the name of the figure ABCD ?***

(b) ***Solve the following equations :***

(1) $3x - 5 = 16$, $x \in \mathbb{N}$ (2) $x + 2 = 2$, $x \in \mathbb{N}$

5 ***Use the following table of data to draw the frequency polygon :***

Sets	10 –	20 –	30 –	40 –	50 –
Frequency	6	10	12	8	6

15 El-Kalyoubia

Educational Zone
Maths Supervision

Answer the following questions :

1 ***Choose the correct answer :***

(a) (3 + 9) .... $\mathbb{N}$. ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(b) If : $x - 2 = 5$, then x = ... (5 or 2 or 10 or 7)

(c) The area of a square whose diagonal length 10 cm. = ... cm^2 (100 or 50 or 60 or 80)

(d) The multiplicative identity in $\mathbb{N}$ is .... (1 or 0 or 2 or 3)

(e) The number of axes of symmetry of the rectangle = ... (zero or 4 or 2 or 6)

2 ***Complete the following :***

(a) 32 + (59 + ...) = (32 + ...) + 68

(b) 1 , 4 , 8 , 13 , ... (In the same pattern)

(c) If $5x = 20$, then x = ...

(d) The area of a triangle whose base length is 5 cm. and the corresponding height of it is 4 cm. = ... cm^2

(e) If (x , 5) = (3 , y) , then x = ... , y = ...

3 (a) ***Use the properties of addition to find the value of :*** 34 + 57 + 66 + 43

(b) ***Use the distributive property to find :*** $27 \times 48 + 27 \times 52$

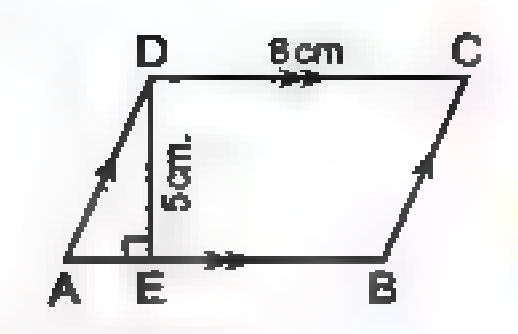


4 (a) ***Solve the equation :*** $2x + 3 = 23$, $x \in \mathbb{N}$

(b) ***In the opposite figure :***

Find the area of a parallelogram ,

in which AB = 8 cm. , DE = 5 cm. , $\overline{DE} \perp \overline{AB}$



5 ***Use the following table of data to make a histogram :***

Sets	10 –	20 –	30 –	40 –
Frequency	4	11	6	9

16 El-Sharkia

Directorate of Educational
Mathematics Supervision For E.L.S.

Answer the following questions :

1 ***Complete the following :***

(a) Area of parallelogram of base 5 cm. and height 4 cm. is .... cm^2.

(b) 0 + 5 = ...

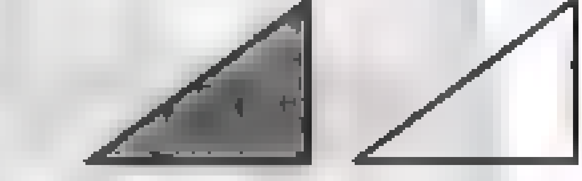
(c) 1 , 4 , 7 , 10 , ... , ... (in the same pattern)

(d) If y = 4 , then 3 y = ...

2 ***Choose the correct answer :***

(a) $(x + 12)$ .... $(x + 15)$, $x \in \mathbb{N}$ (< or > or = or ≥)

(b) The opposite geometric transformation is ....



(reflection. or translation. or rotation.)

(c) Area of square of diagonal 10 cm. = ... (100 cm. or 100 cm^2. or 50 cm. or 50 cm^2.)

(d) (4 × ....) × 78 = 7 800 (10 or 100 or 400 or 25)

3 (a) In the 2-dimensions coordinate plane locate the points A (2 , 1) , B (5 , 1) , C (5 , 4) , D (2 , 4) Draw the figure ABCD and name it.

(b) Find the midpoint of $\overline{AB}$ if A (0 , 4) and B (8 , 4)

(c) Find the height of triangle if its area 50 cm^2. and its base length is 20 cm.

4 (a) ***Calculate the circumference of the circle which its diameter length 14 cm.*** $(\pi = \frac{22}{7})$

(b) ***Using the properties in*** $\mathbb{N}$ ***to find the result of :***

(1) 79 + 36 + 21 + 64 (2) 4 × 17 × 25

5 (a) ***Solve the equation :*** $x + 3 = 8$, $x \in \mathbb{N}$

(b) ***Represent the following table by frequency polygon :***

Sets	10 –	20 –	30 –	40 –	50 –
Frequency	8	10	11	9	6

17 El-Gharbia

El-Gharbia Educational Directorate
Experimental Language Schools

Answer the following questions :

1 ***Choose the correct answer :***

(a) $(5 - 7)$ .... $\mathbb{N}$. ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(b) If : $y (35 + 10) = 8 \times 45$, then $y =$ .... , where $y \in \mathbb{N}$ (45 or 35 or 10 or 8)

(c) The area of the rhombus whose diagonal lengths are 10 cm. and 15 cm. = ... cm^2 (150 or 75 or 50 or 25)

(d) If 7 is subtracted from twice the number x , then the symbolic expression for this situation is .... ($7 - x$ or $7 - 2x$ or $2x - 7$ or $3x - 7$)

2 ***Complete the following :***

(a) $52 + (61 +$ ....$) = (52 + 48) +$ ....

(b) The perimeter of the square whose side length is k cm. = ... cm.

(c) The number of axes of symmetry of the isosceles trapezium = ...

(d) The area of the square = $\frac{1}{2}$ .... × ....

3 (a) ***Which is greater in area :*** The rhombus whose side length is 9 cm. and height = 8 cm. or the triangle whose base length is 14 cm. and height = 9 cm.

(b) ***In the opposite figure :***

ABCD is a parallelogram in which AD = 6 cm. , AE = 3 cm. , CD = 3.6 cm.

Find : (1) The area of the parallelogram ABCD (2) The length of $\overline{AF}$

4 (a) On the coordinate plane , draw the triangle ABC where A (4 , 1) , B (4 , 6) and C (7 , 4) , then draw its image by reflection in $\overleftrightarrow{AB}$



(b) ***Use the properties of ℕ to find the result of :***

(1) 247 + 52 + 253 + 48 (2) 7×98

5 **(a)** ***Solve the following equations where $x \in \mathbb{N}$:***

(1) $2x - 1 = 7$ (2) $x + 8 = 15$

(b) ***The following table shows the marks of 50 pupils in a Maths test :***

Marks	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

Represent these data by a frequency polygon.

18 El-Dakahlia

Mathematics Supervision
E.L.S.

Answer the following questions :

1 ***Complete the following :***

(a) If x is the smallest odd prim number then $x - 1 =$ ·········

(b) If $(x + 3) \times 17 = 17 \times 8$, then $x =$ ·········

(c) The smallest prime number × any prime number = ········· number.

(d) The circumference of a circle ÷ its diameter = ·········

2 ***Choose the correct answer :***

(a) Twice the sum of the number x and three = ·········

($2x + 3$ *or* $2(x + 3)$ *or* $5x$ *or* $3x + 2$)

(b) For any two natural numbers x and y , then $(x - y)$ is possible only if x ········· y

(> *or* ≤ *or* ≥ *or* <)

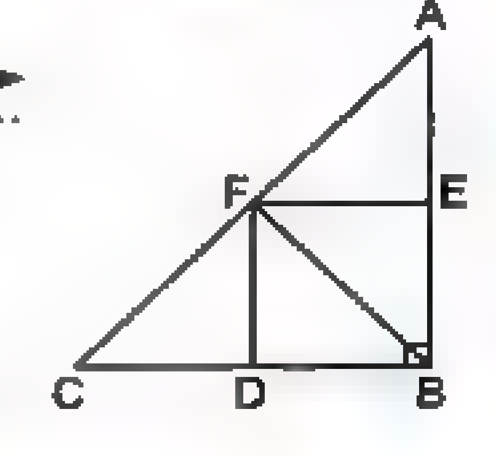
(c) If the area of a square = 50 cm^2 then the length of its diagonal = ········· cm.

(25 *or* 5 *or* 10 *or* 15)

(d) The number of symmetry axes of an equilateral triangle = ·········

(0 *or* 1 *or* 2 *or* 3)

3 ***In the opposite figure :***



(a) Δ BEF is the image of Δ AEF by reflection across $\overleftrightarrow{\cdots\cdots}$

(b) By reflection across $\overleftrightarrow{FD}$ the image of Δ FBD is Δ ·········

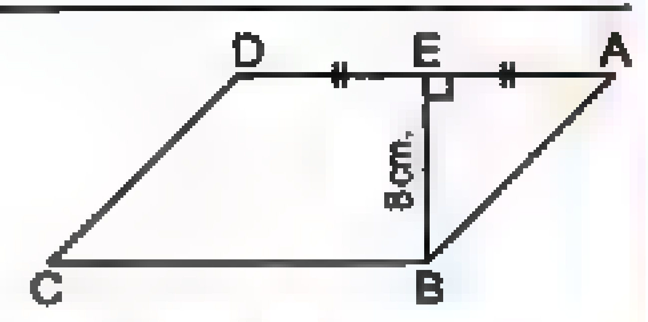
(c) Δ FBA is congruent Δ ·········

(d) The area of Δ FDB = $\frac{\cdots\cdots}{\cdots\cdots}$ from the area of Δ ABC

4 (a) ***Solve the equation :*** $\frac{1}{2}x + 7 = 11$, where $x \in \mathbb{N}$

(b) ***By using properties calculate :*** (1) $125 \times 328 \times 8$ (2) $28 \times 18 - 28 \times 8$

5 (a) The area of parallelogram ABCD is 96 cm².
Calculate the area
of the figure EBCD



(b) ***The following table represents the marks of 50 pupils on the math exam :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

Draw the frequency polygon which represents the given data.



19 El-Ismailia

Directing Mathematics
El-Salam Language School

Answer the following questions :

1 ***Complete the following :***

(a) The smallest natural number is ……… (b) If $2x = 6$, then $x =$ ………

(c) If the area of a parallelogram is 36 cm² and the length of its base = 9 cm. then the length of its height = ……… cm.

(d) If $(x + 2) \times 15 = 5 \times 15$, then $x =$ ………

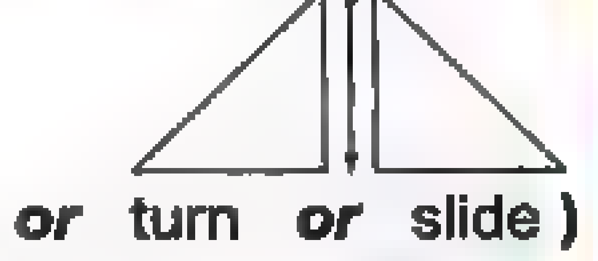
2 ***Choose the correct answer :***

(a) The age of a man now is x then his age after 5 years = ………
(x or $x + 5$ or $x - 5$ or $2x$)

(b) $(5 - 7)$ ……… $\mathbb{N}$ ($\subset$ or $\not\subset$ or $\in$ or $\notin$)

(c) If the base length of a triangle is 6 cm .and its corresponding height = 4 cm. then its area equal ……… cm². (10 or 24 or 12 or 2)

(d) The opposite transformation represents ………



(flip or turn or slide)

3 (a) ***By using properties of addition and multiplication find :***

(1) $28 + 59 + 72 + 41$ (2) $8 \times 137 \times 125$

(b) ***Which is greater in area :*** A square with diagonal length 10 cm. or a rhombus whose diagonals length 12 cm. and 10 cm.



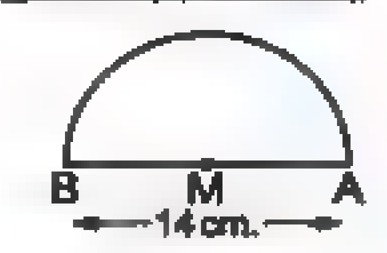
4 (a) ***Solve the equations in ℕ :***

(1) $2x + 9 = 21$ (2) $x - 3 = 5$

(b) In the two dimensions Cartesian coordinates drew Δ ABC where A (1 , 3) , B (4 , 3) and C (4 , 6) , then find its image by reflection on $\overleftrightarrow{BC}$

---

5 (a) ***Find the perimeter of the opposite figure :*** $\left(\pi = \frac{22}{7}\right)$



(b) ***The following table show the daily wages of workers in a company :***

Sets	20 –	30 –	40 –	50 –	60 –	Total
Frequency	8	10	16	12	4	50

Draw the frequency polygon which represent these data.



Suez Educational Zone
Directing Mathematics

Answer the following questions :

1 ***Choose the correct answer :***

(a) If O is the set of odd number , then O .... ℕ (⊂ or ∈ or ⊄ or ∉)

(b) If x is an odd number , then $x + 2$ is .... (even. or odd. or prime or otherwise.)

(c) Twice the number x subtracted 7 from it = ... ($7 - x$ or $2x - 7$ or $7x + 2$ or $14x$)

(d) A rhombus of area 30 cm^2 , the length of one of its diagonals is 6 cm. , then the other diagonal = ... cm. (4 or 6 or 8 or 10)

---

2 ***Complete the following :***

(a) The multiplicative neutral element in ℕ is ....

(b) The square whose area is 72 cm^2 , the length of its diagonal = ... cm.

(c) 1 , 4 , 8 , 13 , ... (in the same pattern)

(d) The set of the natural number which are more than 4 and less than 5 is ....

3 (a) ***In the opposite figure :***

ABCD is a parallelogram in which AB = 10 cm. , DE = 12 cm. , DF = 8 cm. ***Find :***



(1) The area of the parallelogram ABCD

(2) The length of $\overline{BC}$

(b) ***Using the properties of commutation , distribution and association Find the value of each of the following :***

(1) $8 \times 137 \times 125 =$ .... (2) $28 + 59 + 72 =$ ....

---

4 (a) ***Solve the equation :*** $2x + 9 = 21$, $x \in \mathbb{N}$

(b) ***Complete :*** The diameter length of a circle whose circumference = 88 cm. equals .... cm. $\left(\pi = \frac{22}{7}\right)$

---

5 (a) In the Cartesian coordinates plane determine the points A (2 , 2) , B (5 , 2) , C (5 , 8) , D (2 , 8) if $\overline{BC}$ is the axis of reflection of the figure ABCD then determine the image of the figure ABCD

(b) ***The following table shows the marks of 35 pupils in mathematics exam in one of months where the full mark is 50***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	8	12	10	5	35

Draw the frequency polygon which represents these data.

21 Port Said

Education Directory
Port Said Experimental Language School

Answer the following questions :

1 ***Complete the following :***

(a) a + b = b + ...

(b) The smallest counting number is ....

(c) Area of triangle = ...

(d) 3 , 9 , 27 , ...

---

2 ***Choose the correct answer :***

(a) 1.58 .... $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

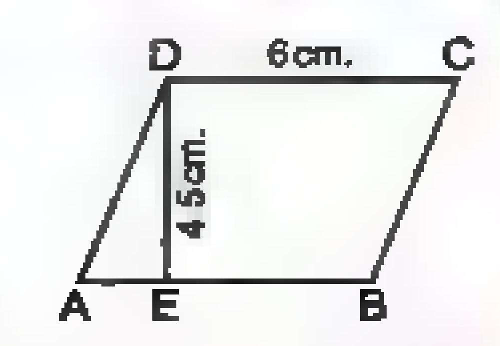
(b) $3x = 15$, then $x =$ .... (3 *or* 4 *or* 5 *or* 12)

(c) The additive identity element is in $\mathbb{N}$ .... (1 *or* 2 *or* 3 *or* 4)

(d) E ∩ O = ... (∅ *or* E *or* O *or* P)



3 (a) ***Find the area of the following parallelogram.***



(b) ***Solve the following equation :*** $x + 3 = 18 \quad x \in \mathbb{N}$

---

4 (a) ***Use the multiplicative properties to find :*** 22×102

(b) ***Use the additive properties to find :*** $47 + 75 + 53 + 25$

---

5 (a) On a coordinate plane draw the triangle ABC in which A (4 , 5) , B (6 , 5) , C (4 , 2) , then draw its image by reflection on $\overleftrightarrow{AB}$

(b)

Number of hours	5 –	10 –	15 –	20 –	25 –
Persons	6	10	12	10	4

Draw this data by a frequency polygon.

22 El-Beheira

Bandar Kafr El-Dawar Educational Zone
Maths supervision

Answer the following questions :

1 ***Complete the following :***

(a) The additive neutral element in $\mathbb{N}$ is ……… , while the multiplicative neutral element in $\mathbb{N}$ is ………

(b) The area of parallelogram whose base length 8 cm. and its height 3 cm. is ……… cm^2.

(c) 1 , 1 , 2 , 3 , 5 , ……… , ……… (in the same pattern)

(d) The square has ……… lines of symmetry.

---

2 ***Choose the correct answer :***

(a) Twice the number x subtracted 3 from it = ………
($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

(b) If : $3x = 15$, $x \in \mathbb{N}$, then x = ……… (5 or 12 or $\frac{1}{3}$ or $\frac{1}{5}$)

(c) The area of a rhombus whose diagonals lengths are 6 cm. and 8 cm. is ……… cm^2. (48 or 12 or 40 or 24)

(d) The product of two natural numbers ……… $\mathbb{N}$.
($\in$ or $\notin$ or $\subset$ or $\not\subset$)

---

3 (a) ***Use the properties of operations in $\mathbb{N}$ to find the result of :***

(1) 34×99 (2) $45 + 36 + 55 + 64$

(b) ***In the coordinate plane represent the points :***

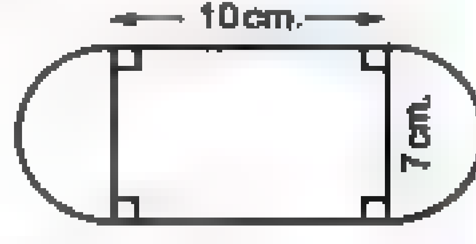
A (2 , 3) , B (3 , 5) and C (5 , 3) , then find the image of Δ ABC by reflection in $\overleftrightarrow{AC}$

4 (a) ***Solve the following equations in $\mathbb{N}$:***

(1) $x + 3 = 12$ (2) $2x - 9 = 21$

(b) ***Calculate the perimeter of the opposite figure :***

Where $\left(\pi = \frac{22}{7}\right)$



5 (a) ***Which is greater in area ?***

A triangle whose base length is 12 cm. and its corresponding height = 8 cm. or a square of side length 7 cm.

(b) ***Represent these data using a histogram :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	8	12	10	5	35

23 Beni Suef

Education Administration
Experimental Language School

Answer the following questions :

1 ***Complete the following :***

(a) The smallest natural number is ………

(b) 3 , 9 , 27 , ……… , ……… (in the same pattern)

(c) The number of axes of symmetry of the square = ………

(d) If : $15 - x = 9$, then x ………

2 ***Choose the correct answer :***

(a) Double the number x subtracted 7 from it = ………

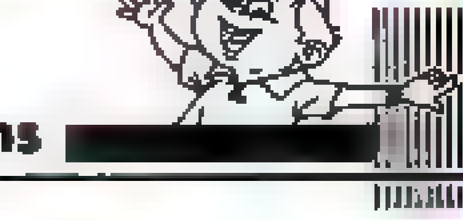
($x - 7$ or $2x - 7$ or $7x + 2$ or $14x$)

(b) The area of a rhombus whose diagonals lengths are 4 cm. and 10 cm. = ……… cm^2 (40 or 80 or 20 or 10)

(c) The circumference of a circle = ………

($2\pi d$ or πr or $4\pi r$ or $2\pi r$)

(d) {2 , 3 , 0 , 4} ……… $\mathbb{N}$. ($\subset$ or $\in$ or $\not\subset$ or $\notin$)



3 (a) The length of the base of a triangle is 6 cm. and its height is 4 cm.

Find the area of this triangle.

(b) In the orthogonal Cartesian coordinates locate the points

A (3 , 5) , B (6 , 5) , C (3 , 2) then find the length of $\overline{AC}$

4 (a) ***By using the properties of operations in ℕ. Find the result of the following :*** 4 × 49 × 25 = ...

(b) ***Solve the equation :*** $3x + 8 = 29$

5 (a) ***Find the area of a parallelogram whose base length 10 cm. and height 3 cm.***

(b) ***Use the following table of data to make the histogram :***

Sets	5 –	7 –	9 –	11 –
Frequency	4	12	9	8

24 El-Menia

El-Menia Educational Zone
Mathematics Supervision

Answer the following questions :

1 ***Complete the following :***

(a) If : $x + 8 = 15$, $x \in ℕ$, then x = ...

(b) The square whose area is 72 cm^2 , the length of its diagonal = ...

(c) The diameter length of the circle whose circumference is 88 cm. equals .... cm.

(d) 32 + (59 + ...) = (32 + 68) + ...

2 ***Choose the correct answer :***

(a) The number of axes of symmetry of the rhombus = ...

(zero **or** 1 **or** 2 **or** 4)

(b) (3 + 9) .... ℕ ($\in$ **or** $\notin$ **or** $\subset$ **or** $\not\subset$)

(c) The triangle whose base length is 5 cm. , and the corresponding height is 6 cm. its area = ... cm^2. (30 **or** 15 **or** 25 **or** 36)

(d) Twice the number x subtracted 3 from it = ...

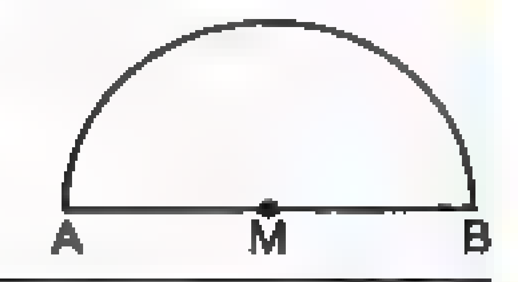
($x - 3$ **or** $2x + 3$ **or** $2x - 3$ **or** $3 - 2x$)

3 ***In the coordinate plane draw the triangle ABC where :***
A (1 , 2) , B (3 , 2) and C (3 , 4) then draw the image of the triangle ABC by reflection on $\overleftrightarrow{BC}$

---

4 (a) ***Solve the equation :*** $2x + 5 = 9$, $x \in \mathbb{N}$

(b) ***Calculate the perimeter of the opposite figure :***
AM = 7 cm. $\left(\pi = \frac{22}{7}\right)$



---

5 ***The following table shows the frequency distribution of the number of work hours of 50 workers :***

Sets	4 –	6 –	8 –	10 –	Total
Frequency	12	8	16	14	50

Draw the frequency polygon which represents these data.



Assiut Educational Directorate
Experimental Language School

Answer the following questions :

1 ***Choose the correct answer :***

(a) The multiplication neutral element in $\mathbb{N}$ is ……… (0 or 1 or 2 or 3)

(b) If : $x - 7 = 19$, $x \in \mathbb{N}$, then x = ……… (12 or 24 or 26 or 30)

(c) If : a and b $\in \mathbb{N}$ then a × b ……… $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

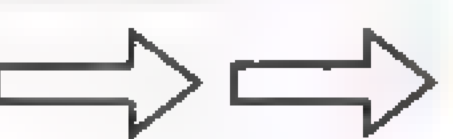
(d) The parallelogram has ……… lines of symmetry. (0 or 1 or 2 or 3)

---

2 ***Complete the following :***

(a) The sum of two numbers is 15 one of them is x , then the other = ………

(b) The type of the opposite transformation is a ………



(c) 1 , 4 , 8 , 13 , ……… , ……… (in the same pattern)

(d) The rhombus whose area is 36 cm^2. and the length of one of its diagonals is 8 cm. , the length of the other diagonal = ……… cm.

---

3 (a) On 2-coordinate plane draw Δ ABC where : A (2 , 1) , B (5 , 1) and C (5 , 5) , then draw the image of the triangle ABC by reflection in $\overleftrightarrow{BC}$

(b) ***Solve each of the following equations :***

(1) $2x + 5 = 19$ (2) $\frac{1}{3}x + 8 = 10$

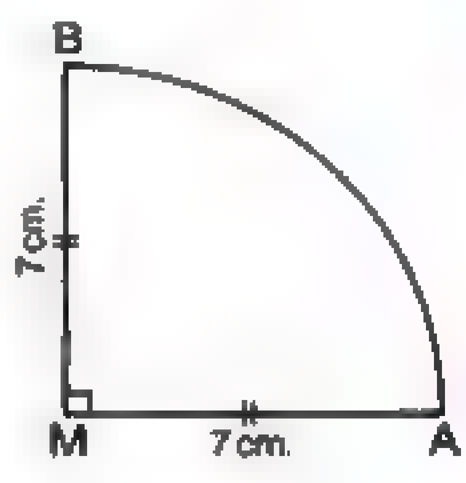


4 **(a)** ***Which is greater in area ?***

The triangle whose base length is 12 cm. and its corresponding height = 8 cm. or the parallelogram in which the length of the base = 10 cm. , and its corresponding height = 5 cm.

(b) ***Using the properties of operations in ℕ to find the result of the following :*** (1) 572 × 99 (2) 113 + 419 + 87 + 181

5 **(a)** ***Find the perimeter of the opposite figure where MA = MB = 7 cm.*** $\left(\pi = \frac{22}{7}\right)$



(b) ***Represent the following distribution by frequency polygon :***

Sets	5 –	7 –	9 –	11 –	13 –
Frequency	4	12	10	7	8



Educational Directorate
Mathematics Superivison

Answer the following questions :

1 ***Choose the correct answer :***

(a) The sum of two natural numbers .... ℕ (∈ or ∉ or ⊂ or ⊄)

(b) The area of a rhombus whose diagonals lengths are 6 cm. and 8 cm. is .... cm^2. (48 or 20 or 24 or 40)

(c) If the longest chord in a circle is 7 cm. then the circumference of the circle is .... cm. where $\left(\pi = \frac{22}{7}\right)$ (3.5 or 7 or 22 or 44)

(d) If $x + 7 = 19$, $x \in ℕ$, then x = ... (26 or 12 or 11 or 13)

2 ***Complete the following :***

(a) The least netural number is ....

(b) The additive netural element in ℕ is .... , while the multiplicative natural element in ℕ is ....

(c) Area of the triangle = $\frac{1}{2}$ the length of its base × ....

(d) The number of axes of symmetry of the rhombus equals ....

3 (a) Draw on the coordinates plane the triangle ABC where A (1 , 0) , B (2 , 2) and C (2 , 5) , then draw its image by reflection on $\overleftrightarrow{BC}$

(b) ***Use the commutative and associative properties in ℕ to calculate :***
872 + 199 + 128 + 801

---

4 (a) Zahraa saved 14 pounds she bought 3 notebooks for x pound for each the remainder with her was 8 pounds express there situations by an equation.

(b) Find to the nearest hundredth the area of a parallelogram whose base length is 34.7 cm. and height 28.17 cm.

(c) The diagonal length of a square 6 cm. ***Find its area.***

---

5 (a) In the orthogonal cartesian coordinates locate the points A (2 , 2) , B (5 , 2) , C (5 , 8) , D (2 , 8) then ***complete :***

(1) The length of $\overline{AB}$ = ... units. (2) The length of $\overline{BC}$ = ... units.

(3) The figure ABCD is ....

(4) The perimeter of the figure ABCD = ... units.

(b) ***The following table shows the marks of 50 pupils in an exam of mathematics in one of months where the full mark is 50 marks. Draw the frequency histogram and the frequency polygon which represents these data :***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

27 Aswan

Aswan Educational Directorate
Experimental Language School

Answer the following questions :

1 ***Choose the correct answer :***

(a) $\frac{5}{7}$ .... ℕ (∈ *or* ∉ *or* ⊂ *or* ⊄)

(b) 10 × 0 = ... (100 *or* 10 *or* 0 *or* not possible)

(c) If : $2x = 6$, then : x = ... (2 *or* 3 *or* 4 *or* 6)

(d) The circumference of the circle whose radius is 14 cm. equals .... cm. $\left(\pi = \frac{22}{7}\right)$ (14 *or* 22 *or* 44 *or* 88)



2 ***Complete the following :***

(a) If : A (0 , 4) and B (4 , 4) , then the coordinates of the midpoint of $\overline{AB}$ is ……

(b) The multiplicative identity element in ℕ is ………

(c) (9 × 4) × 3 = ……… × (3 × 4)

(d) The area of the triangle = $\frac{1}{2}$ × ……… × ………

3 (a) ***Use the properties of addition to find the following :*** 82 + 75 + 18

(b) The lengths of the diagonals of a rhombus are 14 cm. and 10 cm. ***Calculate its area.***

4 (a) On a coordinate plane Draw the figure ABCD where A (1 , 1) , B (4 , 1) , C (4 , 3) , D (1 , 3) what is the name of the figure ABCD ?

(b) Find the height of the parallelogram with an area of 48 cm² and its base is 8 cm.

5 (a) ***Solve the equation :*** $2x + 3 = 9$

(b) ***Use the following table of data to draw a histogram :***

Number of hours	5 –	7 –	9 –	11 –
Frequency	4	12	9	5

28 South Sinai

South Sinai Educational Directorate
Tur Sinai Educational Administration

Answer the following questions :

1 ***Choose the correct answer :***

(a) 2 + 9 ……… ℕ (∈ or ∉ or ⊂ or ⊄)

(b) Twice the number x subtracted 3 from it ………
($x - 3$ or $2x + 3$ or $2x - 3$ or $3 - 2x$)

(c) The square whose diagonal length is 8 cm. it's area = ……… cm².
(64 or 32 or 16 or 8)

(d) The perimeter of a square whose side length L = ………
(2L or 4L or 3L or 5L)

2 ***Complete the following :***

(a) The area of parallelogram = ………

(b) If : $x + 3 = 12$, then x = ………

(c) The next number in the pattern 5 , 35 , 65 , ...

(d) 99 added to the neutral element of multiplication = ...

3 (a) Calculate the area of triangle whose base length 10 cm. and the corresponding height of it is 9 cm.

(b) *Put "< , = or >" :*

(1) $x + 18$ ☐ $x + 17$ (2) 2239 ☐ 2229

4 (a) ***Put (✓) for the correct statement and (×) for the wrong one :***

(1) $(5 - 8) \in \mathbb{N}$ ( )

(2) The additive neutral element in $\mathbb{N}$ is one. ( )

(3) The value of x in the equation $3x = 24$ is 8 ( )

(b) ***Find the circumference of a circle with diameter length 14 cm.*** $\left(\pi = \frac{22}{7}\right)$

5 ***The following table shows the marks of 40 pupils in mathematics exam.***

Sets	10 –	20 –	30 –	40 –	50 –	Total
Frequency	5	7	12	9	7	40

Draw frequency histogram and the frequency polygon which represent these data

29 Red Sea

Safaga Educational Administration
Safaga Experimental Language School

Answer the following questions :

1 ***Choose the correct answer :***

(a) 25 .... $\mathbb{N}$ ($\in$ or $\notin$ or $\subset$ or $\not\subset$)

(b) The additive identity element in $\mathbb{N}$ is .... (0 or 1 or 2)

(c) The circumference of a circle = ... (πr or $2\pi r$ or $3\pi r$)

(d) If $2x = 18$, then x = ... (6 or 8 or 9)

(e) $(12 \times 2) + 2$ = ... (6 or 12 or 24)

2 ***Complete the following :***

(a) If y – 7 = 5 , then y = ...



(b) The circumference of a circle with diameter 7 cm. = ... cm.

(c) 1 , 3 , 6 , 10 , 15 , ... (in the same sequence)

(d) $(20 \times 50) \times 30 =$ .... $\times (50 \times 30)$

(e) A rhombus of diagonals length 12 cm. , and 10 cm. , its area = ... cm^2.

3 (a) ***Graph the following figure :*** A (1 , 2) , B (5 , 2) , C (3 , 7) and draw its line of symmetry.

(b) ***Complete :*** If $2x + 3 = 15$, then $x =$ ....

4 (a) ***Find the area of triangle with base 8 cm. and height 5 cm. ?***

(b) ***Use the properties of multiplication to find :*** $4 \times 16 \times 25$

5 ***Represent the following data by histogram :***

Sets	0 –	4 –	8 –	12 –
Frequency	8	12	3	7

30 Matrouh

Matrouh Educational Administration
Experimental Language School

Answer the following questions :

1 ***Complete the following :***

(a) $2 \times (13 \times 5) = 2 \times (5 \times$ .... $)$

(b) The perimeter of a square whose side length is $x =$ ....

(c) Area of the triangle = the length of its base $\times$ ....

(d) Dividing any natural number by .... is not possible.

2 ***Choose the correct answer :***

(a) Add 6 to the number x , the symbolic expression is ....

($6 - x$ *or* $6x$ *or* $x - 6$ *or* $x + 6$)

(b) $(8 - 10)$ .... $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(c) The area of a rhombus whose diagonals lengths are 6 cm. and 8 cm. is .... cm^2. (48 *or* 12 *or* 24 *or* 40)

(d) The next number in the pattern 5 , 35 , 65 is ....

(70 *or* 75 *or* 95 *or* 105)

3 (a) ***Use the distributive property to get the product of the following :***

18×99

(b) ***Translate this verbal statement into an equation :***

A number if added to 17 the sum is 28

---

4 (a) ***Find the circumference of a circle with diameter length 14 cm.***

$\left(\pi = \frac{22}{7}\right)$

(b) ***Solve the equation :*** $x - 5 = 8$

---

5 ***The following table shows the marks of 50 pupils in an exam of mathematics in one of months where the full mark is 50 marks.***

Sets	10 –	20 –	30 –	40 –	Total
Frequency	10	12	18	10	50

Draw the frequency polygon which represents these data.



Answers of models of school book

Model 1

1 (a) ∈ (b) 2 (c) 24

2 (a) (1) 20 (2) associative

(b) The area of the square

$= \frac{1}{2} \times 10 \times 10 = 50 \text{ cm}^2$.

The area of triangle $= \frac{1}{2} \times 8 \times 15 = 60 \text{ cm}^2$.

The area of triangle is greater.

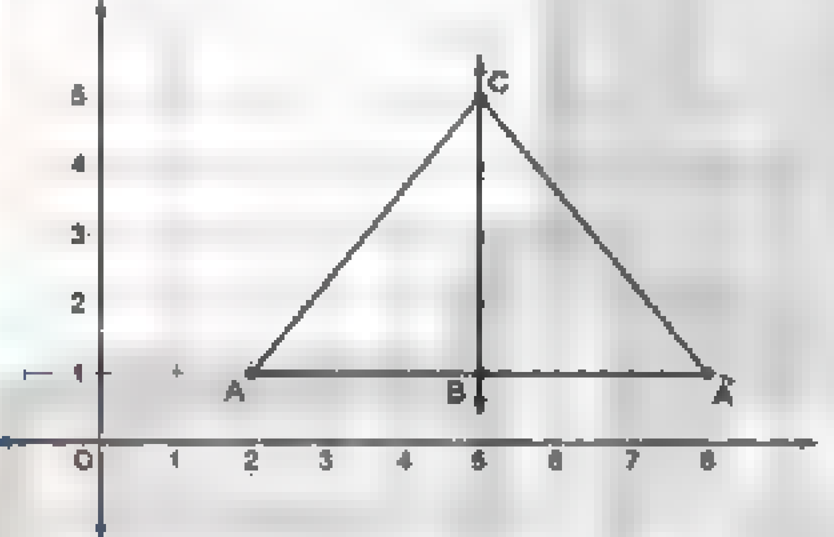
3 The equation is : $2x + 10 = 24$

$2x + 10 = 24$ $2x = 24 - 10$

$2x = 14$ $x = 14 \div 2$ $x = 7$

4 (a)





The area of $\Delta ACA' = \frac{1}{2} \times 6 \times 4$

$= 12$ units area

(b) The area of the parallelogram

$= 12 \times 5 = 60 \text{ cm}^2$.

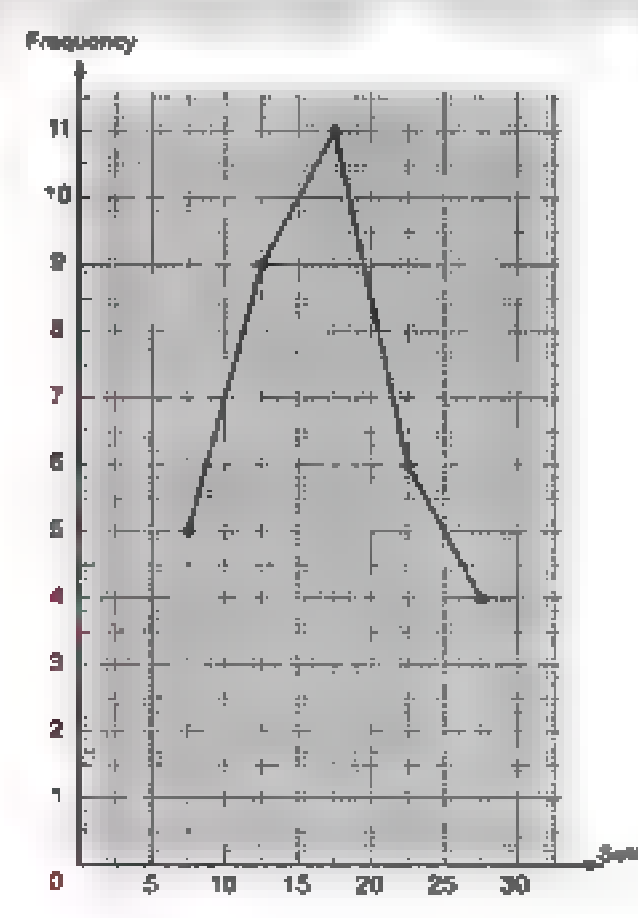
The height $= 60 \div 6 = 10$ cm.

5 (a) (1) < (2) <





(b)



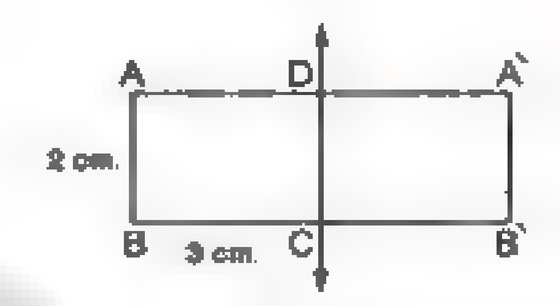
Model 2

1 (a) its diagonal , it self (b) ∈

(c) 100 , 2300 (d) {1 , 2 , 3 , 4}

2 (a) (1) 15 (2) ⊂ (3) 22

(b)



3 (a) (1) The area $= \frac{1}{2} \times 10 \times 8 = 40 \text{ cm}^2$.

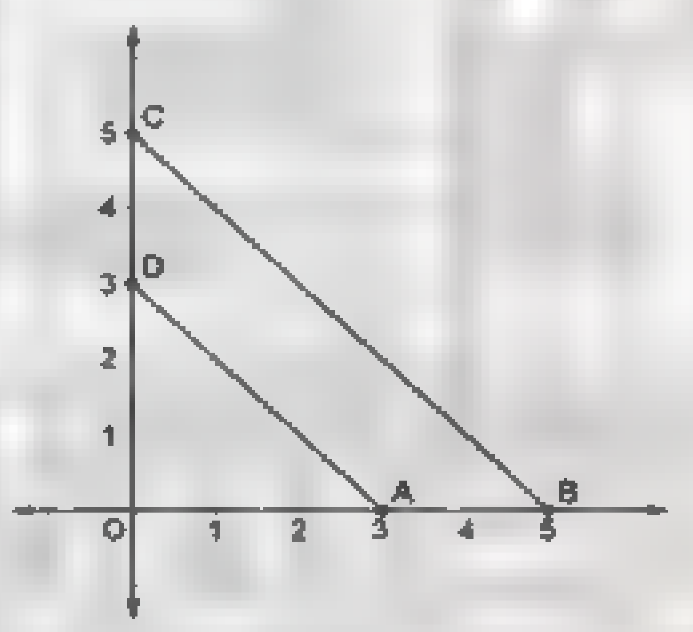
(2) Δ ADC

(b) The equation is : $20 - 3x = 5$

$20 - 3x = 5$ $20 - 5 = 3x$

$3x = 15$ $x = 15 \div 3$ $x = 5$

4 (a)



The area of $\Delta OBC = \frac{1}{2} \times 5 \times 5$

$= 12\frac{1}{2}$ square units.

The area of $\Delta OAD = \frac{1}{2} \times 3 \times 3$

$= 4\frac{1}{2}$ square units.

The area of figure ABCD

$= 12\frac{1}{2} - 4\frac{1}{2} = 8$ square units.

(b) $872 + 199 + 128 + 801$

$= 872 + 128 + 199 + 801$

$= (872 + 128) + (199 + 801)$

$= 1000 + 1000 = 2000$

5 (a) (1) The perimeter

$= \left(35 \times \frac{22}{7}\right) + 70 + 70 + 70 = 320$ cm.

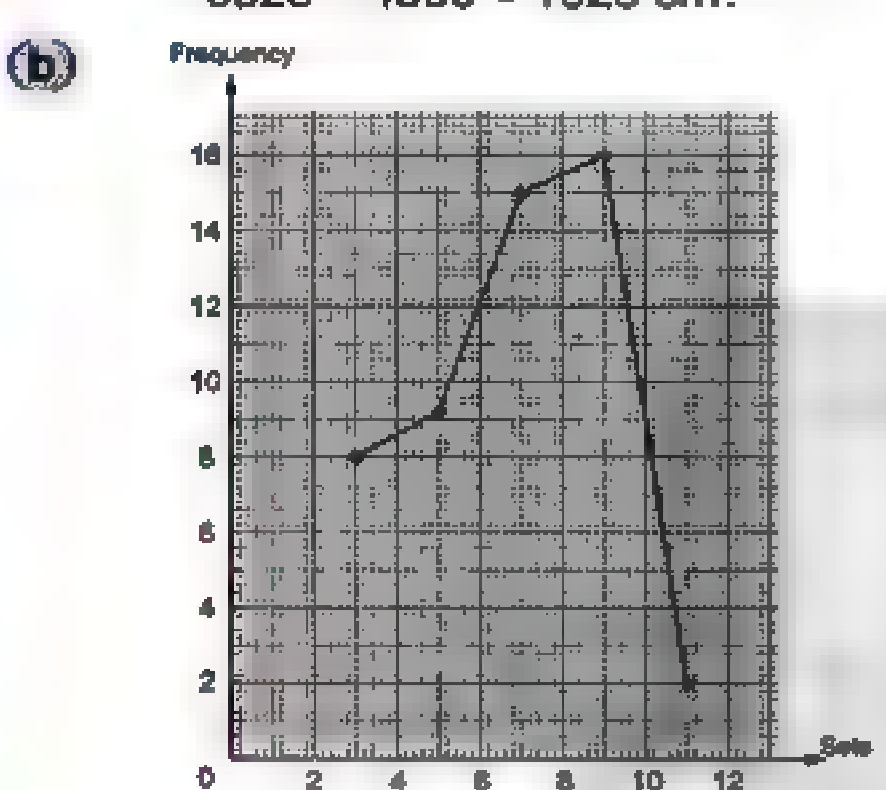
(2) The area of the square $= 70 \times 70$

$= 4900$ cm²

The area of the semicircle

$= 6825 - 4900 = 1925$ cm²

(b)



Model 3

1 (a) 12 (b) 18 (c) ∅

2 (a) (1) $x\pi$ (2) 8

(b) The area of the rhombus $= \frac{1}{2} \times 6 \times 8$

$= 24$ cm²

The area of the square $= \frac{1}{2} \times 8 \times 8$

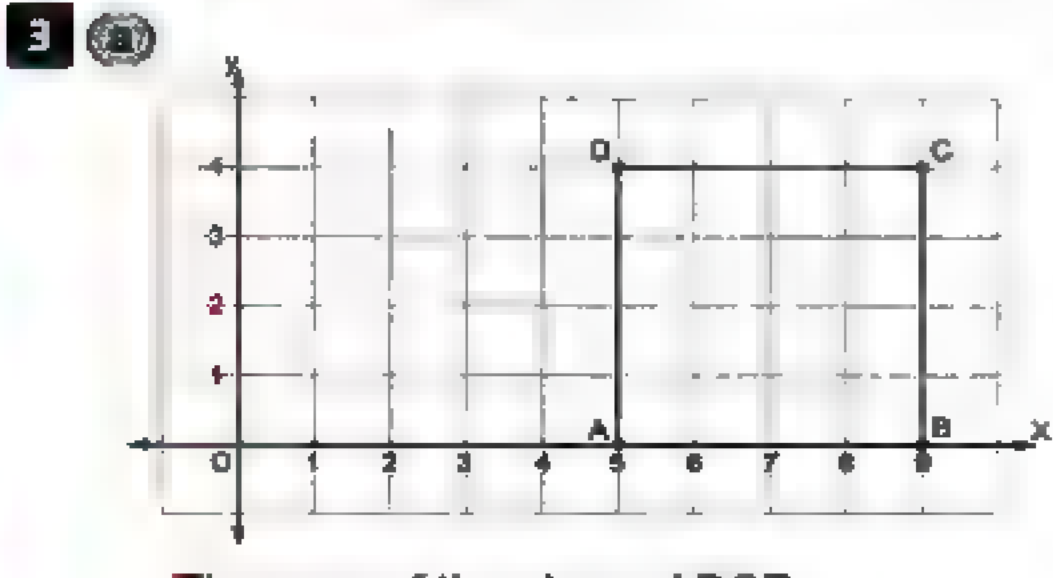
$= 32$ cm²

The area of the square is greater.

(c) $2x + 9 = 21$ $2x = 21 - 9$

$2x = 12$ $x = 12 \div 2$ $x = 6$

3 (a)



The area of the shape ABCD

$= 4 \times 4 = 16$ square units.

(b) $25 \times 9892 \times 4 = 25 \times 4 \times 9892$

$= 100 \times 9892$

$= 989200$

4 The distance around the figur

$= \left(14 \times \frac{22}{7}\right) + 28 + 28 = 100$ cm.

5

Basketball | Volleyball | Football

Model 4

1 (a) 1 (b) 5 (c) 100

2 (a) 2r (b) (2 , 5) (c) 10 (d) 20

3 (a) The distance around the figure

$= \left(7 \times \frac{22}{7}\right) + 14 = 36$ cm.

(b) $653 + 548 + 347 = 653 + 347 + 548$

$= (653 + 347) + 548$

$= 1000 + 548 = 1548$

4 (a) X = {3 , 4 , 5 , 6 , 7}

0 1 2 3 4 5 6 7 8

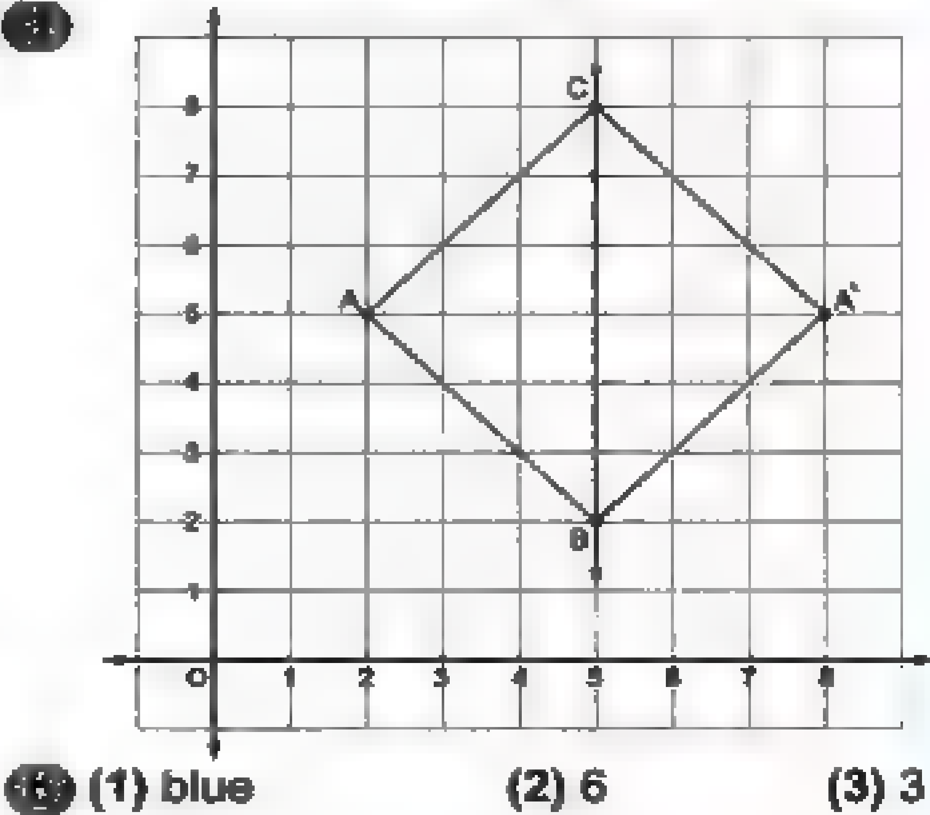
(b) The area of triangle $= \frac{1}{2} \times 6 \times 8 = 24$ cm²

The length of $\overline{BD} = \frac{24 \times 2}{10} = 4.8$ cm.

(c) The equation is : $3x - 1 = 8$

$3x = 8 + 1$ $3x = 9$ $x = 9 \div 3$ $x = 3$

5 (a)



(b) (1) blue (2) 6 (3) 3



Answers of Final examinations

Model 5

1 (a) E (b) 1 (c) $(x + 10)$ pounds
(d) $21 - x$ (e) 100 cm^2.

2 (a) ⊂ (b) even (c) $2x - 3$
(d) 20 cm^2. (e) 2

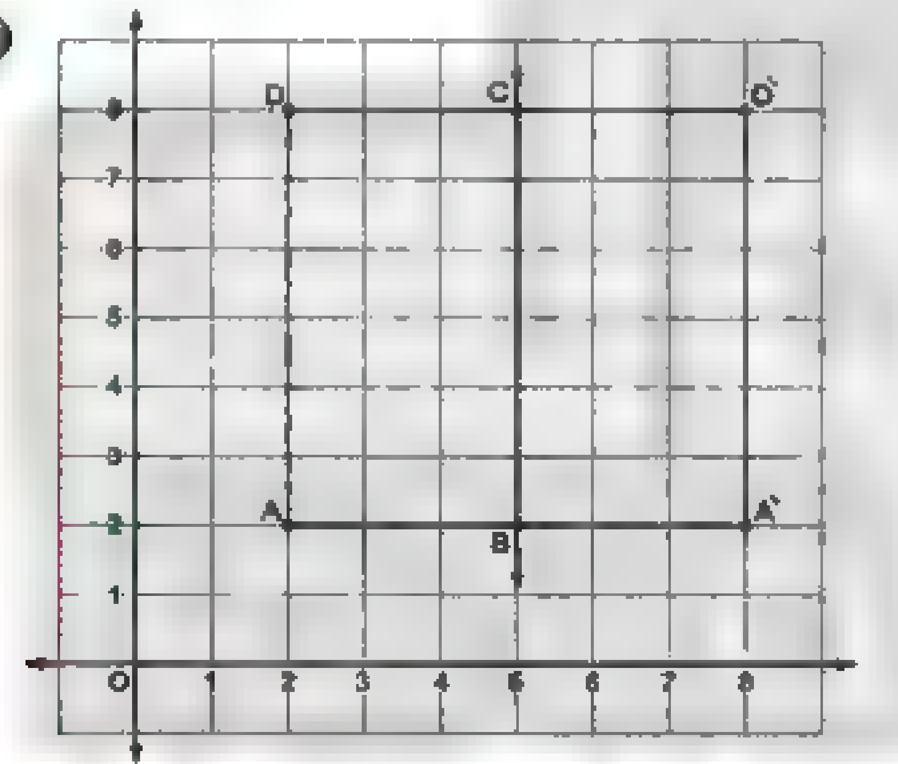
3 (a) The numbers are : $x + 5$, $x + 7$, $x + 9$, $x + 11$, $x + 13$

(b) The area of the rhombus $= \frac{1}{2} \times 8 \times 6 = 24$ cm^2.
, the area of the parallelogram $= 10 \times 5 = 50$ cm^2.
The difference $= 50 - 24 = 26$ cm^2.

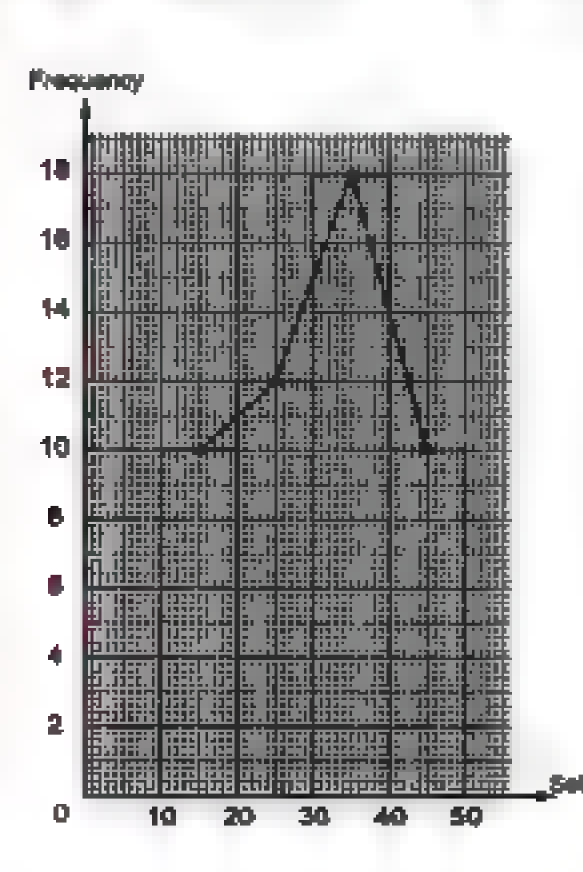
4 (a) $14 - 3x = 8$

(b) The perimeter $= \left(35 \times \frac{22}{7}\right) + 70 = 180$ cm.

5 (a)



(b)



Model 6

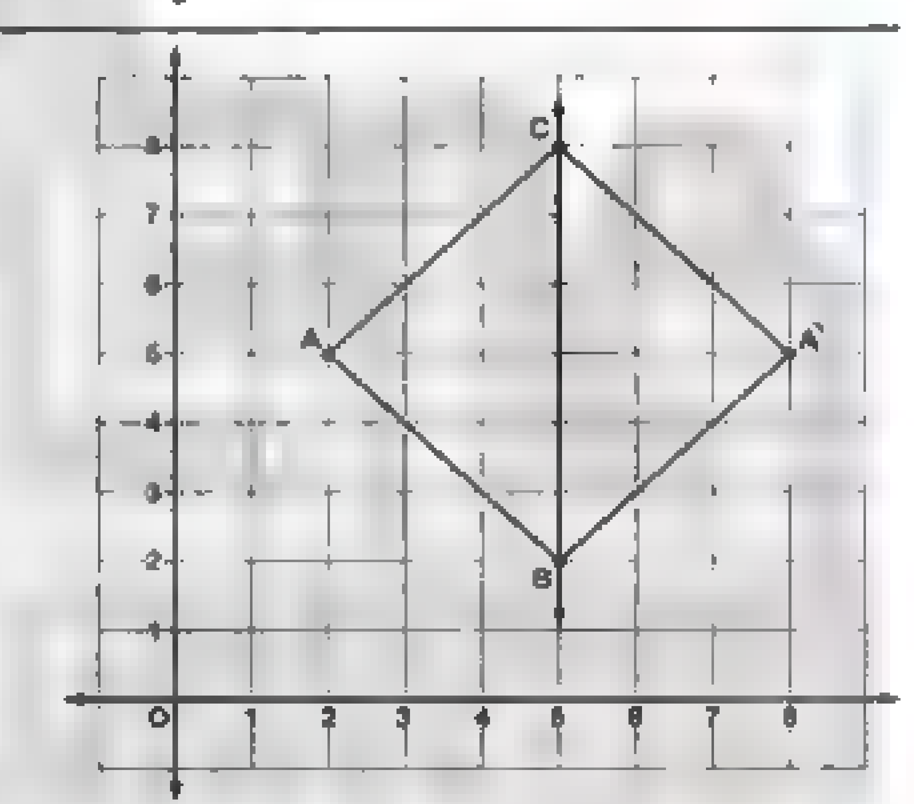
1 (a) ∈ (b) 9 (c) 60
(d) $2y - 4$ (e) odd

2 (a) 68 , 59 (b) 2 (c) 3 ℓ cm.
(d) d × d (e) 19

3 (a) The area of the triangle $= \frac{1}{2} \times 12 \times 8 = 48$ cm^2.
The area of the parallelogram $= 10 \times 5 = 50$ cm^2.
The area of the parallelogram is greater.

(b) The area of the parallelogram $= 10 \times 12 = 120$ cm^2.
BC $= \frac{120}{8} = 15$ cm.

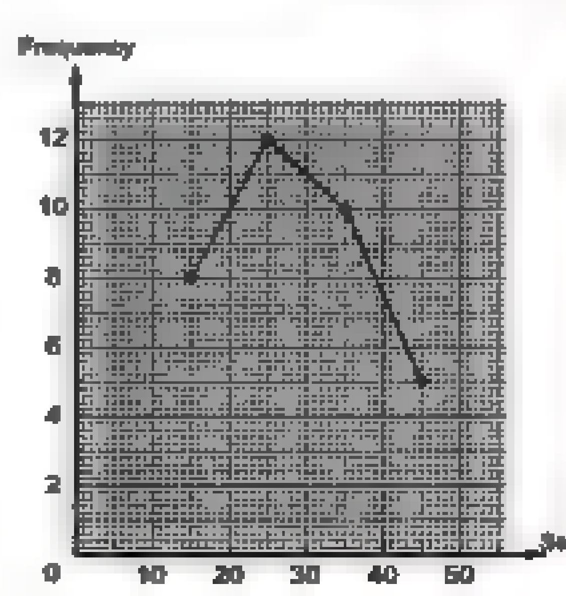
4



BC = 6 length unit.
, number of axes of symmetry of the figure = 2 , its area $= \frac{1}{2} \times 6 \times 6 = 18$ square unit.

5 (a) (1) $x = 9$ (2) $x = 6$

(b)



Answers of final examinations

Model 7

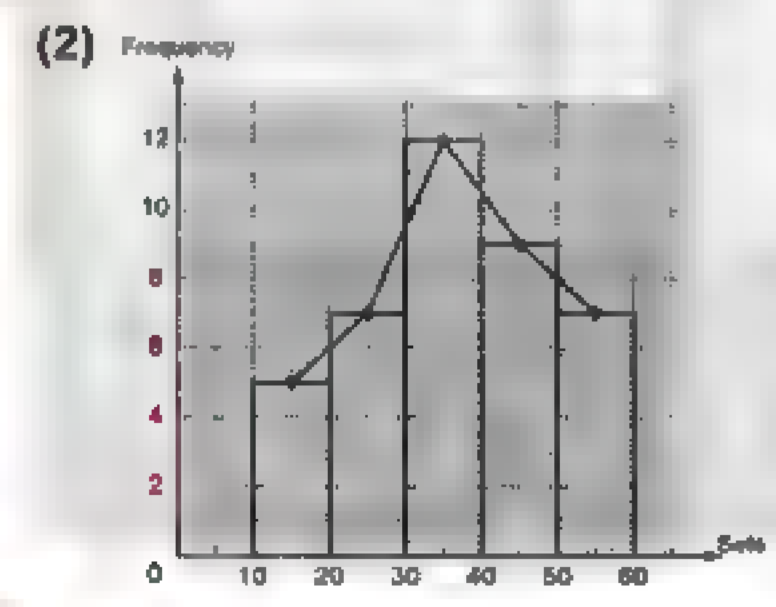
1 (a) 7 (b) 32 (c) {3 , 4}
(d) $\subset$ (e) 15

2 (a) 35 , 36 , 100 , 135 (b) 9 (c) 12
(d) 19 (e) 11

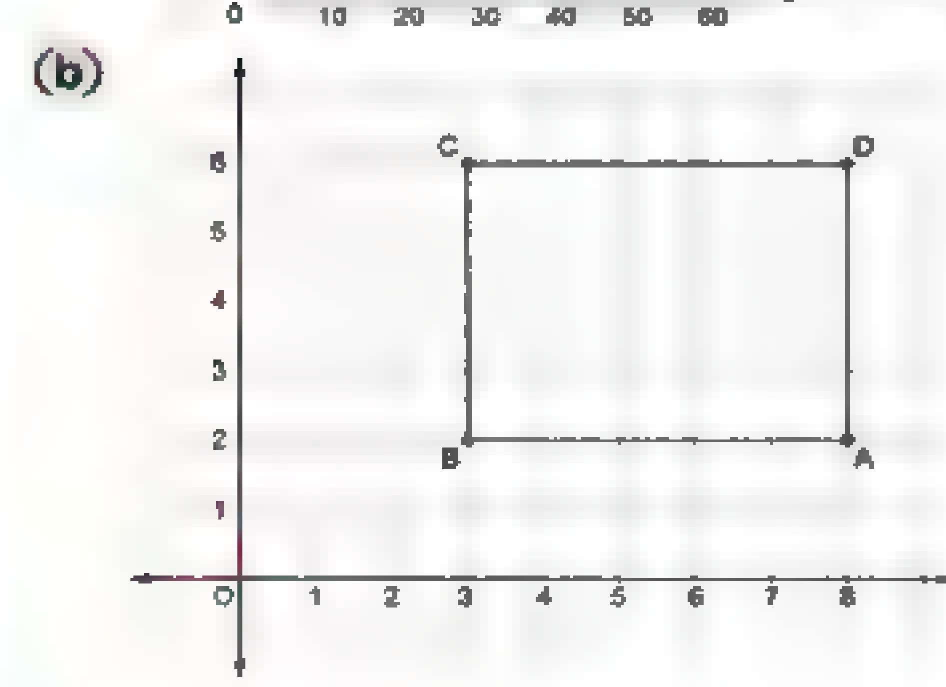
3 (a) The covered distance if the wheel turns one turn = $56 \times \frac{22}{7} = 176$ cm.
The number of turns = $35200 \div 176 = 200$
(b) $x - 2y = 7$
(c) (1) $(x + 7)$ years (2) $(x - 10)$ years

4 (a) (1) $8 \times 125 \times 137 = (8 \times 125) \times 137$
$= 1000 \times 137 = 137000$
(2) $28 + 72 + 59 = (28 + 72) + 59$
$= 100 + 59 = 159$
(b) $DC = \frac{828}{23} = 36$ cm , $EC = 35 - 23 = 12$ cm.
The area of Δ DCE $= \frac{1}{2} \times 12 \times 36$
$= 216 \text{ cm}^2$

5 (a) (1) A = 9
(2)



(b)



(1) 5 (2) 4
(3) a rectangle (4) 18

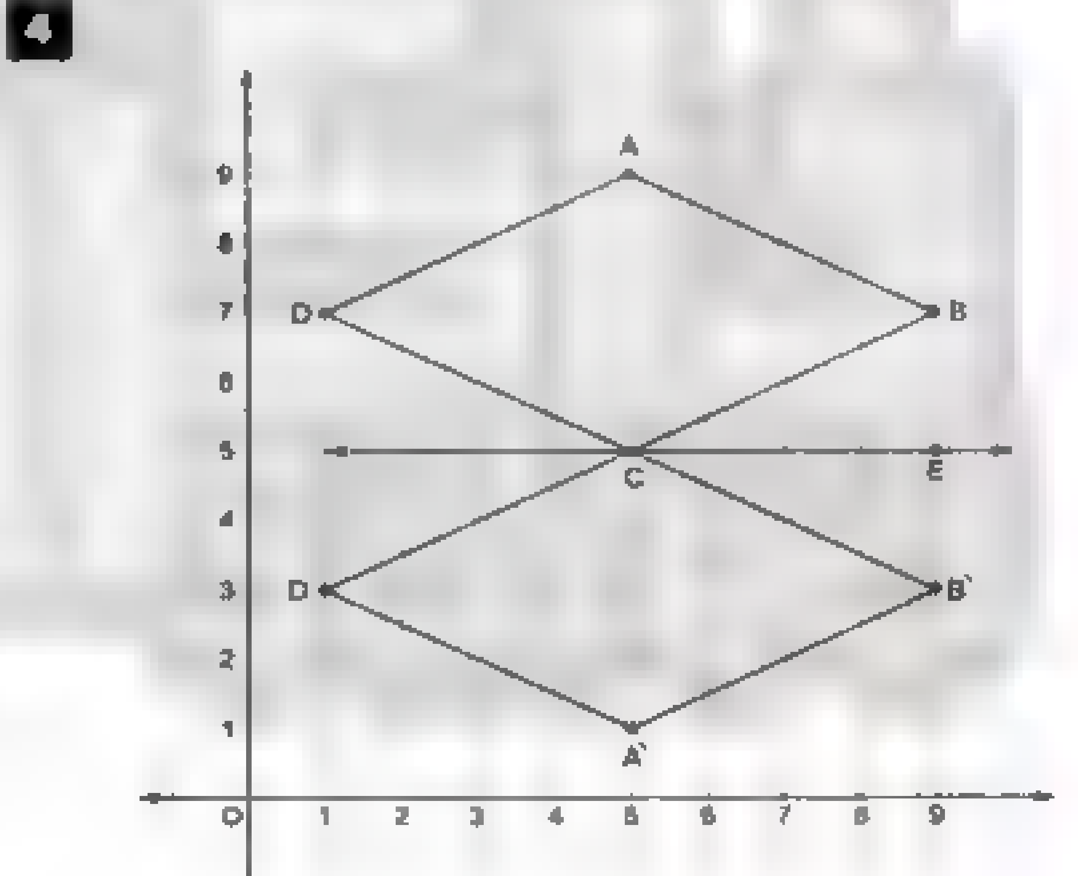
Model 8

1 (a) 28 (b) $2x - 7$ (c) { 0 , 1 , 2}
(d) 81 (e) 48

2 (a) 4 (b) 44
(c) { 2 , 3 , 5 , 7 , 11 , 13}
(d) 15 (e) 100 , 7400

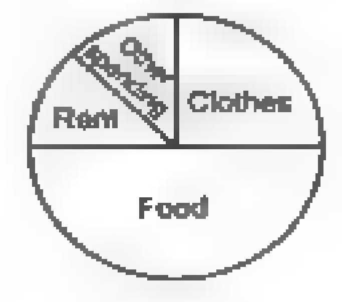
3 (a) (1) 519 (100 − 1)
$= 519 \times 100 - 519 \times 1$
$= 51900 - 519 = 51381$
(2) 316 (1000 + 1)
$= 316 \times 1000 + 316 \times 1$
$= 316000 + 316 = 316316$
(b) (1) 8 (2) 28 (3) 84

4



$\grave{A}$ (5 , 1) , $\grave{B}$ (9 , 3) , $\grave{C}$ (5 , 5) and $\grave{D}$ (1 , 3)
The figure ABCD is a rhombus , the area of the figure ABCD $= \frac{1}{2} \times 8 \times 4 = 16$ square unit.

5 (a) (1) $x = 2$ (2) $x = 4$
(b)





Model 9

1 (a) {3 , 2} (b) ∉ (c) 10
(d) 28 (e) 20

2 (a) ∅ (b) 3 y + 5 (c) (8 – x) cm.
(d) 6 cm. (e) 9

3 (a) (1) $x = 6$ (2) $x = 30$

(b) The area of rectangle = the area of square = $\frac{1}{2} \times 12 \times 12 = 72 \text{ cm}^2$

, the length of the rectangle = $\frac{72}{8} = 9$ cm.

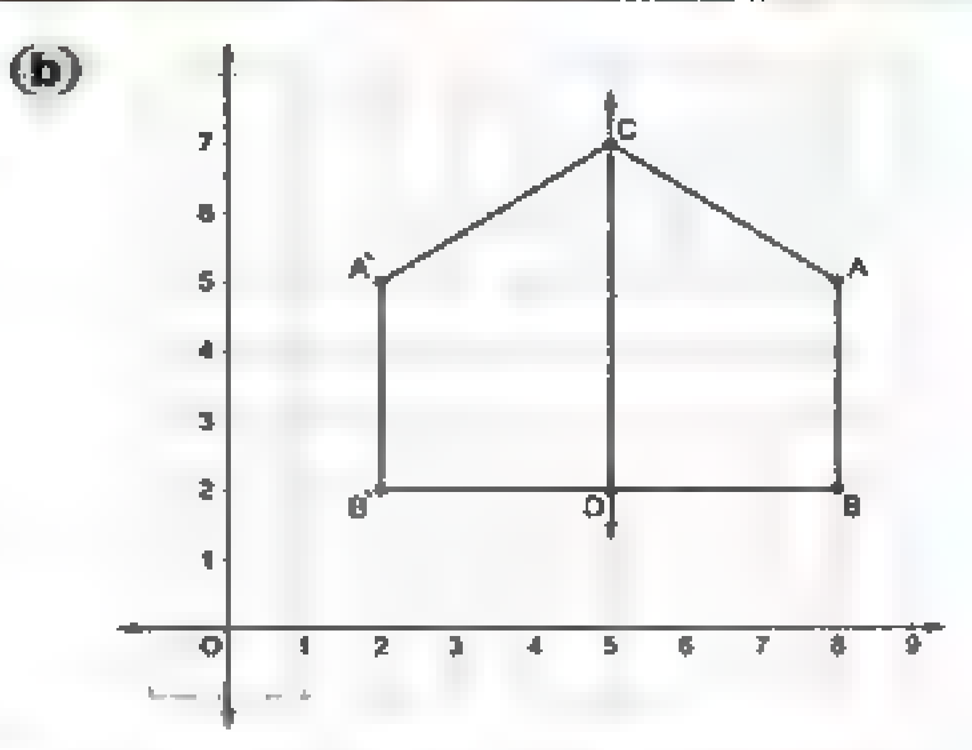
, the perimeter of the rectangle = (8 + 9) × 2 = 34 cm.

4 (a) The distance covered if the bicycle turns one turn = 50 × 3.14 = 157 cm.
= 1.57 m.

the distance covered if the bicycle turns 1200 turns = 1.57 × 1200 = 1884 m.

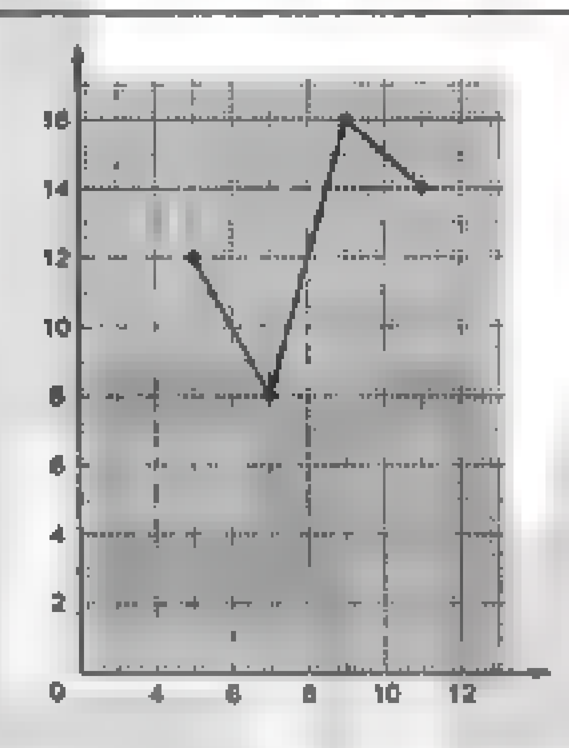


(b)



Á (2 , 5) , B́ (2 , 2) , D (5 , 2) and C (5 , 7)

5



Answers of final examinations

Answers of model examinations

Model 1

1 (a) 4 (b) {3 , 4} (c) $20 - x$ (d) $\subset$

2 (a) 32 (b) 7
(c) translation (d) 13 , 21

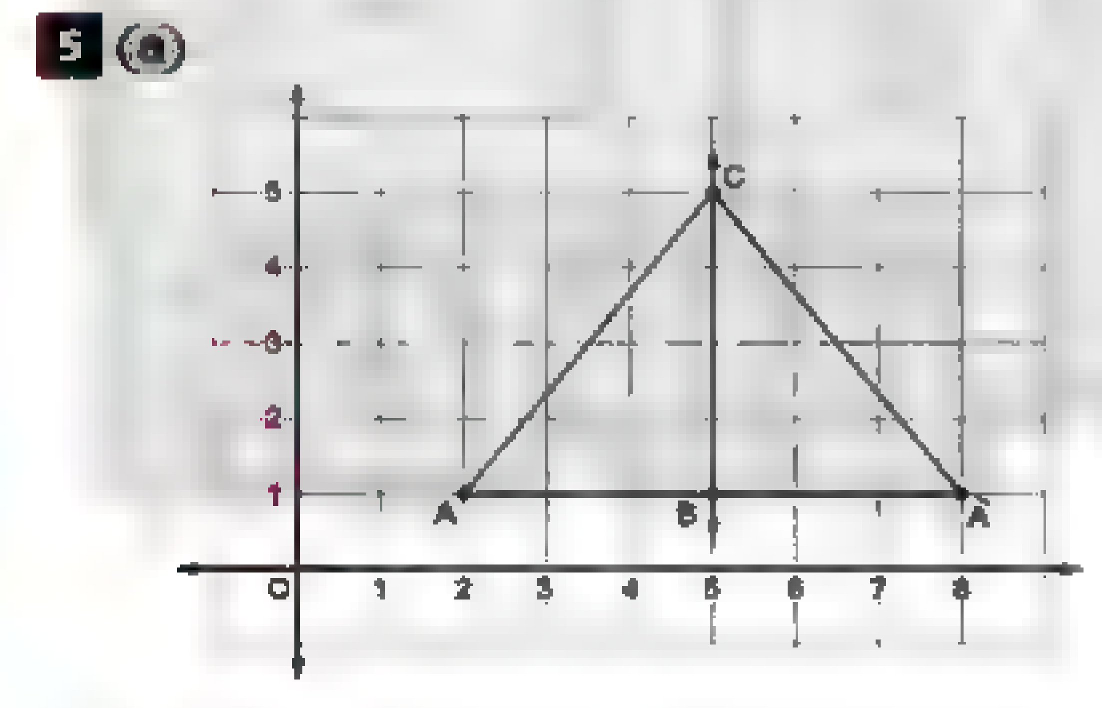
3 (a) The area of triangle ABC $= \frac{1}{2} \times 6 \times 8$
$= 24 \text{ cm}^2$.
The length of $\overline{AD} = \frac{24}{\frac{1}{2} \times 10} = 4.8$ cm.

(b) 873 + 199 + 127 + 801
= 873 + 127 + 199 + 801
(commutative property)
= (873 + 127) + (199 + 801)
(associative property)
= 1000 + 1000 = 2000

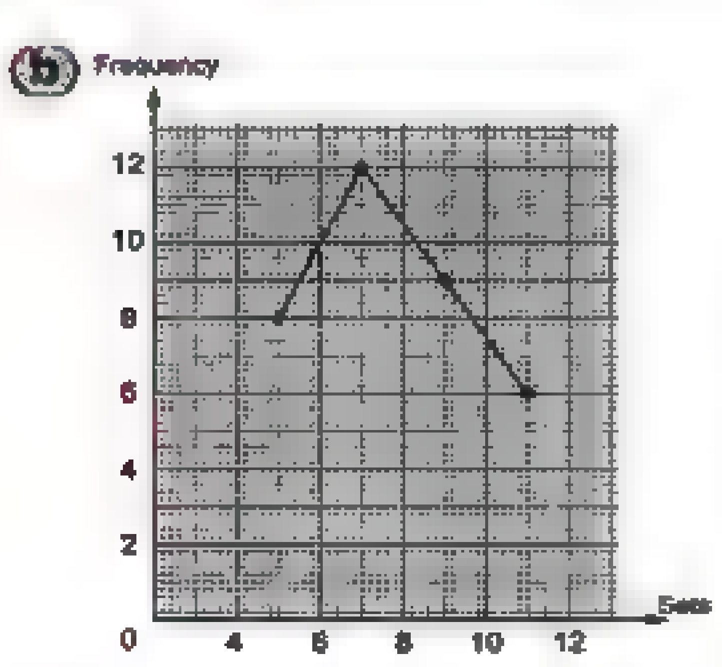
4 (a) $2x + 3 = 5$ $2x = 5 - 3$ $2x = 2$
$x = \frac{2}{2}$ $x = 1$

(b) The perimeter $= \left(\frac{1}{2} \times 2 \times 35 \times \frac{22}{7}\right) + 70$
$= 110 + 70 = 180$ cm.

5 (a)



(b)



Model 2

1 (a) $\notin$ (b) translation (c) 8 (d) {2}

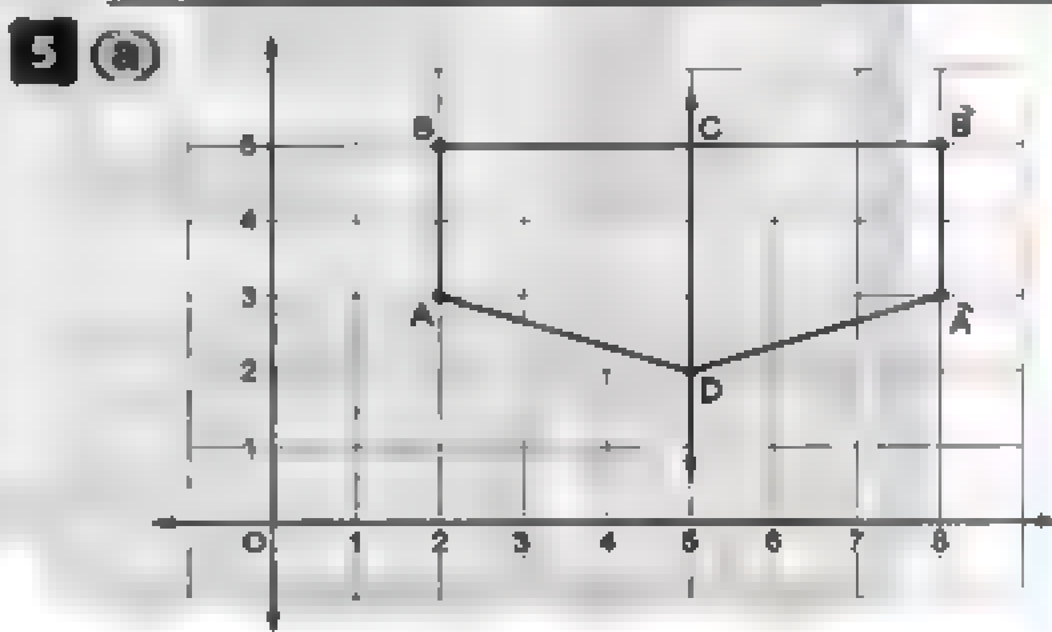
2 (a) 100 (b) $x + 5$ (c) 2 (d) 6

3 (a) The area of the triangle $= \frac{1}{2} \times 10 \times 7$
$= 35 \text{ cm}^2$.
The area of the parallelogram $= 8 \times 4$
$= 32 \text{ cm}^2$.
The area of the triangle is greater.

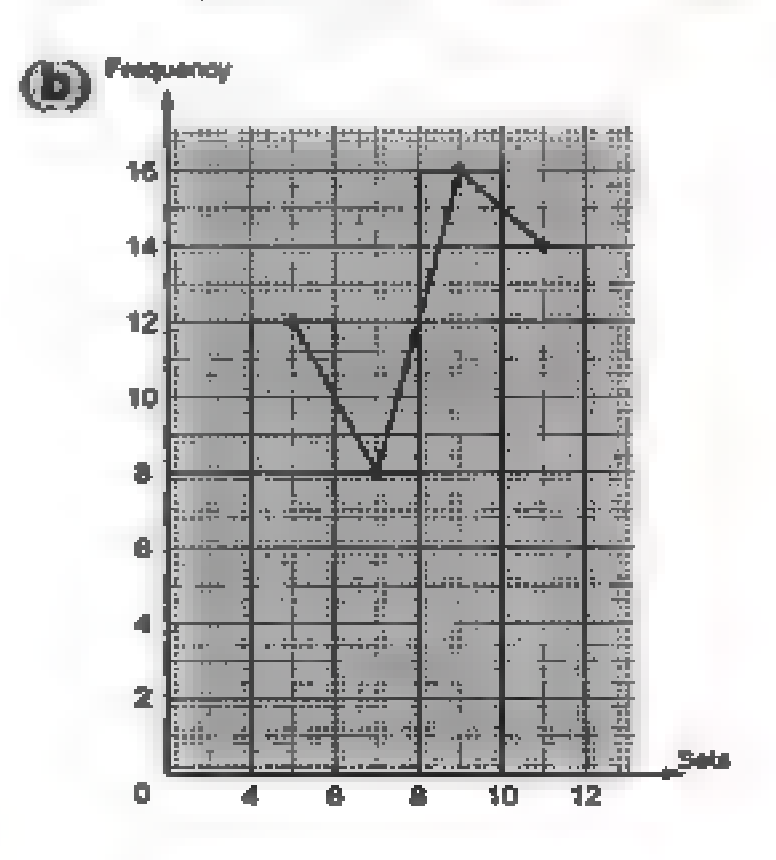
(b) (1) $8 \times 149 \times 125 = 8 \times 125 \times 149$
$= (8 \times 125) \times 149 = 1000 \times 149$
$= 149000$
(2) 28 + 78 + 72 = 28 + 72 + 78
= (28 + 72) + 78
= 100 + 78 = 178

4 (a) (1) $(x + 3)$ years (2) $(x - 5)$ years
(b) The length of the diameter $= \frac{66}{\frac{22}{7}} = 21$ cm.

5 (a)



(b)





Model 3

1 (a) 0 (b) 12 (c) 7 + y (d) even

2 (a) 0 , 1 (b) 5 (c) 3 y + 7 (d) (2 , 5)

3 (a) (1) $98 \times 37 = (100 - 2) \times 37$
$= 100 \times 37 - 2 \times 37$
$= 3700 - 74 = 3626$

(2) $299 \times 17 = (300 - 1) \times 17$
$= 300 \times 17 - 1 \times 17$
$= 5100 - 17 = 5083$

(b) (1) $3x + 8 = 29$ $\quad 3x = 29 - 8$ $\quad 3x = 21$
$x = \frac{21}{3}$ $\quad x = 7$

(2) $\frac{1}{7}x - 3 = 1$ $\quad \frac{1}{7}x = 1 + 3$ $\quad \frac{1}{7}x = 4$
$x = 4 \times 7$ $\quad x = 28$

4 (a) The area of the rhombus $= \frac{1}{2} \times 12 \times 16$
$= 96 \text{ cm}^2$

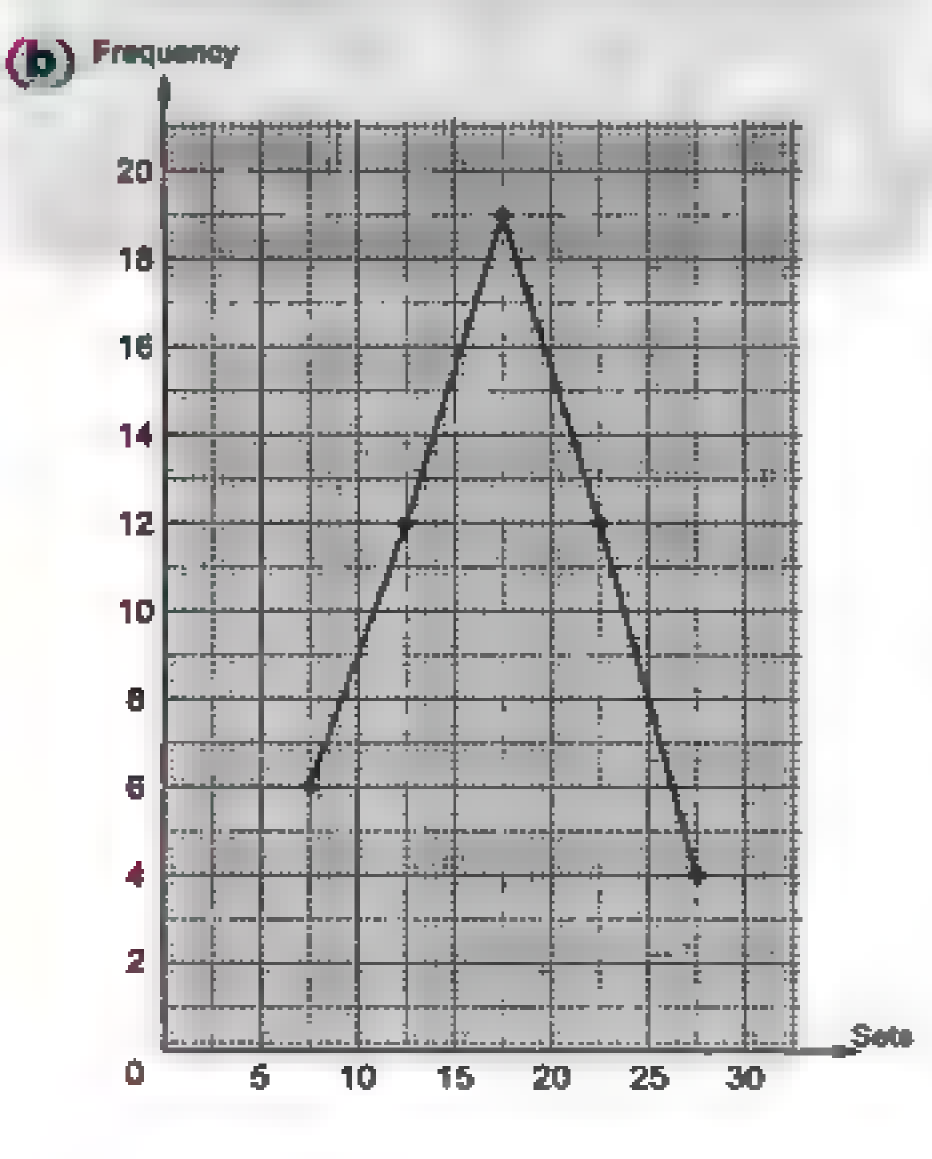
The side length $= 96 \div 9.6 = 10$ cm.

(b) (1) $\overline{EF}$ (2) $\overline{DF}$

5 (a) The circumference of the wheel $= 50 \times 3.14$
$= 157$ cm.
$= 1.57$ m.

The distance $= 1.57 \times 1000 = 1570$ m.

(b)

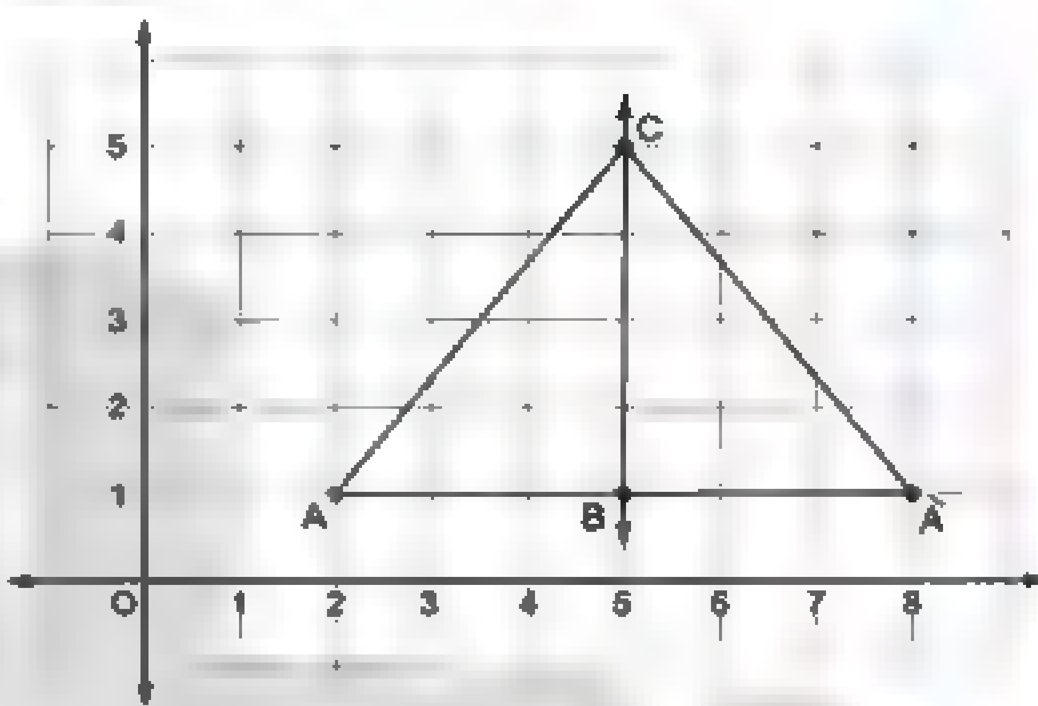


Model 4

1 (a) an odd (b) 4 x (c) 3 (d) 25

2 (a) {1 , 2 , 3 , 4 , 5} (b) rotation
(c) 15 (d) $5 - x$

3 (a)



The sum of areas $= 2 \times \frac{1}{2} \times 3 \times 4$
$= 12$ area unit.

(b) (1) $123 + 254 + 377 + 246$
$= 123 + 377 + 254 + 246$
$= (123 + 377) + (254 + 246)$
$= 500 + 500 = 1000$

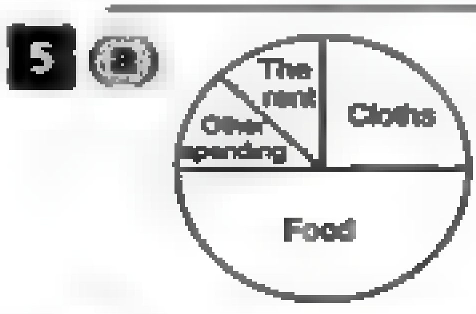
(2) $25 \times 125 \times 4 = 25 \times 4 \times 125$
$= (25 \times 4) \times 125$
$= 100 \times 125 = 12500$

4 (a) The area $= 12 \times 5 = 60 \text{ cm}^2$
The height $= \frac{60}{6} = 10$ cm.

(b) (1) $\frac{1}{3}x + 8 = 10$ $\quad \frac{1}{3}x = 10 - 8$
$\frac{1}{3}x = 2$ $\quad x = 2 \times 3$ $\quad x = 6$

(2) $\frac{1}{6}x - 3 = 4$ $\quad \frac{1}{6}x = 4 + 3$ $\quad \frac{1}{6}x = 7$
$x = 7 \times 6$ $\quad x = 42$

5 (a)



(b) The perimeter $= \left(\frac{1}{4} \times 2 \times \frac{22}{7} \times 7\right) + 7 + 7$
$= 11 + 14 = 25$ cm.

Answers of final examinations

Model 5

1 (a) $2x-7$ (b) 2 (c) $\varnothing$ (d) 22

2 (a) $\in$ (b) (5 , 4) (c) 1 (d) 5 L − 6

3 (a) $3x+5=20$ $3x=20-5$ $3x=15$

$x=\frac{15}{3}$ $x=5$

The price of each notebook is L.E. 5

(b) (1) $25\times 98\times 4=25\times 4\times 98$

$=(25\times 4)\times 98$

$=100\times 98=9800$

(2) $642+173+358+27$

$=642+358+173+27$

$=(642+358)+(173+27)$

$=1000+200=1200$

4 (a) The height = 48 ÷ 8 = 6 cm.

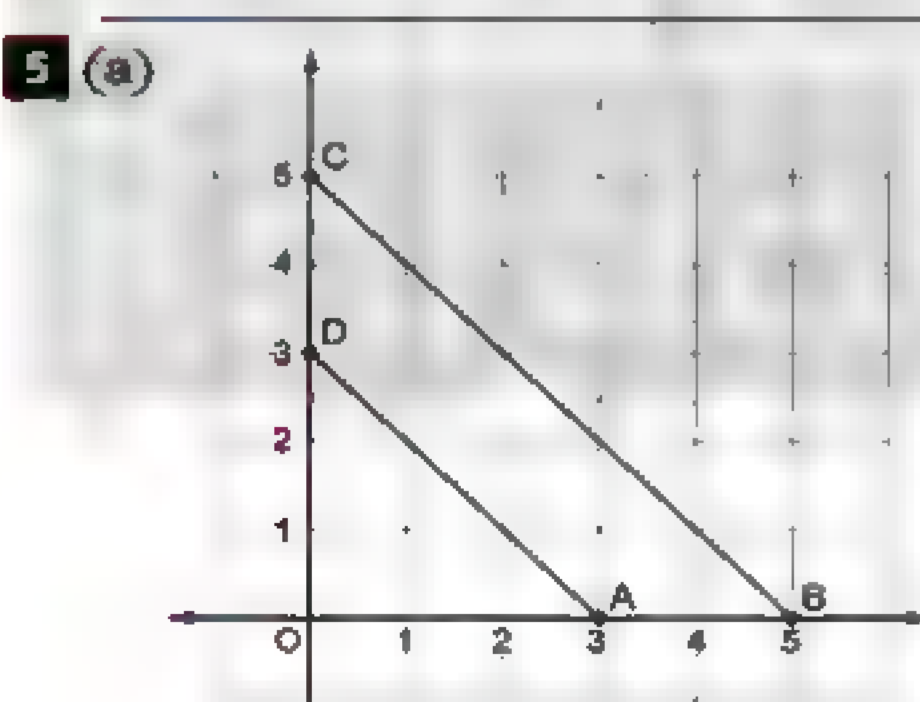
(b) The area of Δ ABC = $\frac{1}{2}\times 6\times 8=24\text{ cm}^2$.

The area of Δ EBC = $\frac{1}{2}\times 6\times 4=12\text{ cm}^2$.

The area of the shaded part = 24 − 12

= 12 cm².

5 (a)



The area of Δ AOD = $\frac{1}{2}\times 3\times 3$

= 4.5 area unit.

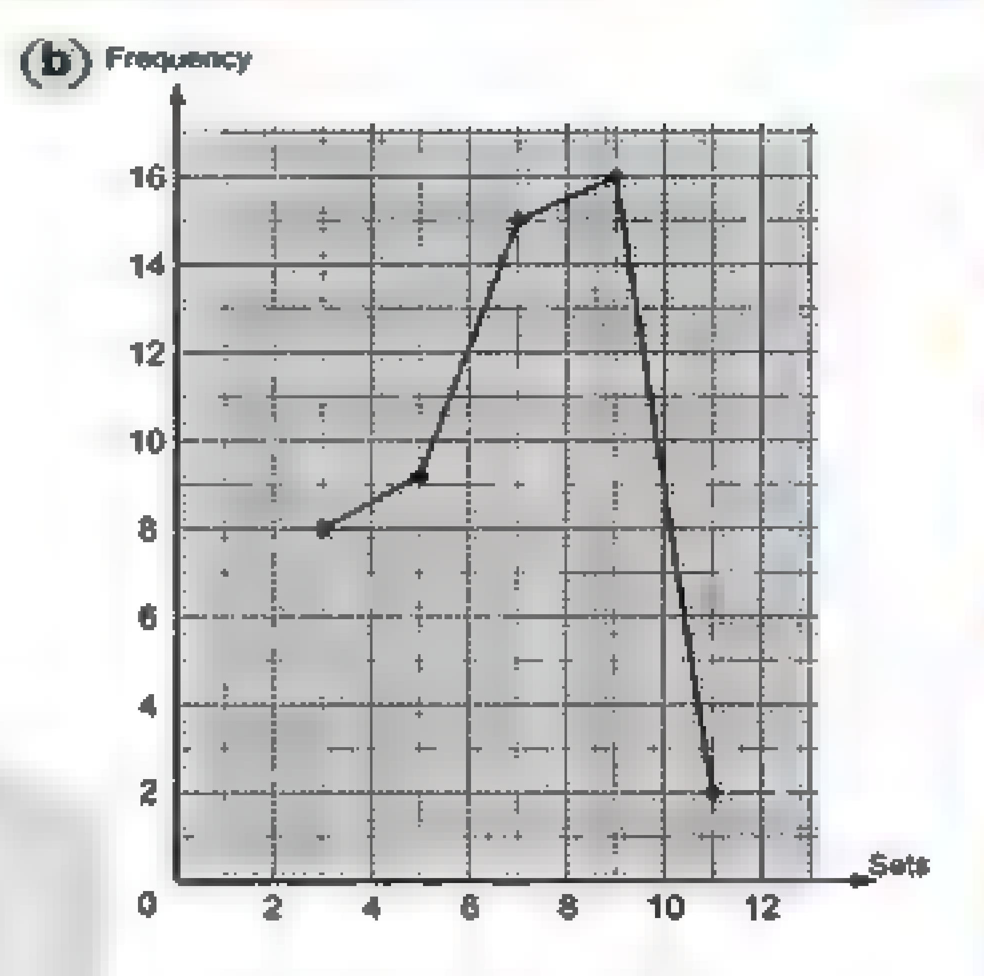
The area of Δ BOC = $\frac{1}{2}\times 5\times 5$

= 12.5 area unit.

The area of the shape ABCD

= 12.5 − 4.5 = 8 area unit.

(b)



Model 6

1 (a) $\notin$ (b) zero (c) $2x-3$ (d) {2}

2 (a) 19 , 26 (b) $x+10$

(c) translation (d) 32

3 (a) The length of $\overline{CE}$ = 35 − 23 = 12 cm.

The length of $\overline{CD}$ = 828 ÷ 23 = 36 cm.

The area of Δ DCE = $\frac{1}{2}\times 12\times 36=216\text{ cm}^2$.

(b) (1) $8\times 133\times 125=8\times 125\times 133$

$=(8\times 125)\times 133$

$=1000\times 133=133000$

(2) $27+69+73=27+73+69$

$=(27+73)+69$

$=100+69=169$

4 (a) The perimeter = (6 × 3.14) + 10 + 10

= 18.84 + 10 + 10

= 38.84 cm.

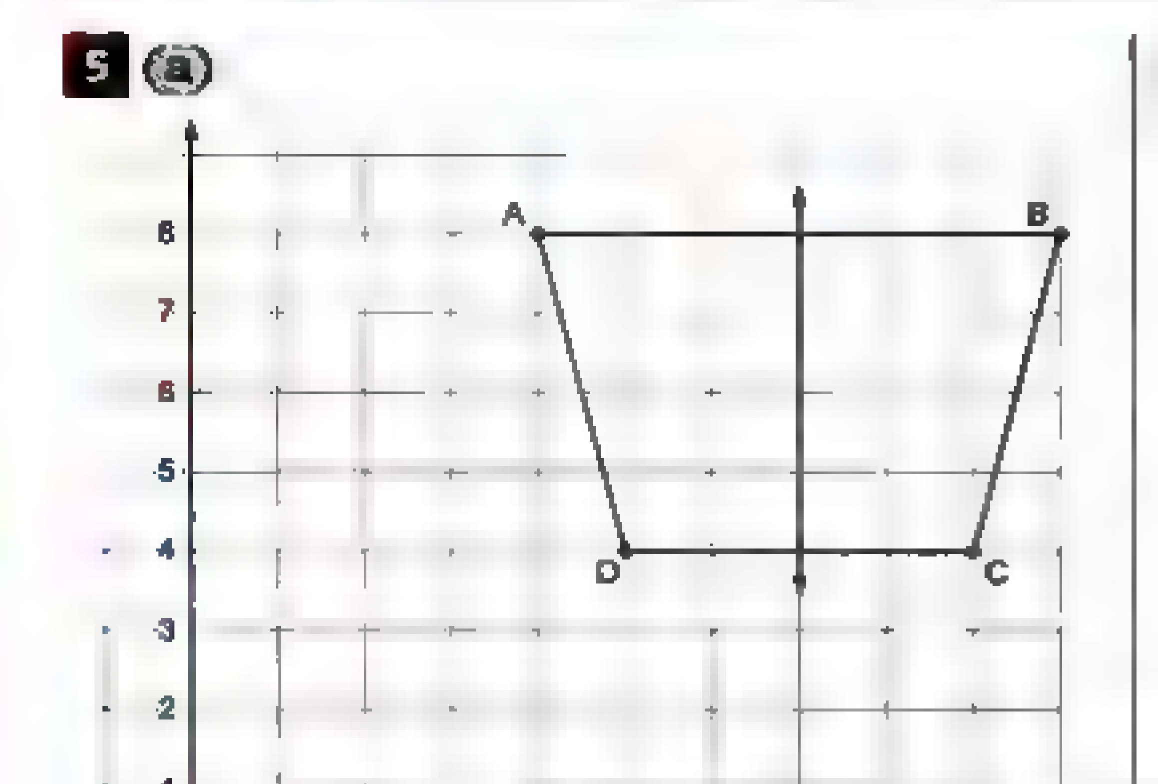
(b) (1) $\frac{1}{3}x+8=9$ $\frac{1}{3}x=9-8$ $\frac{1}{3}x=1$

$x=1\times 3$ $x=3$

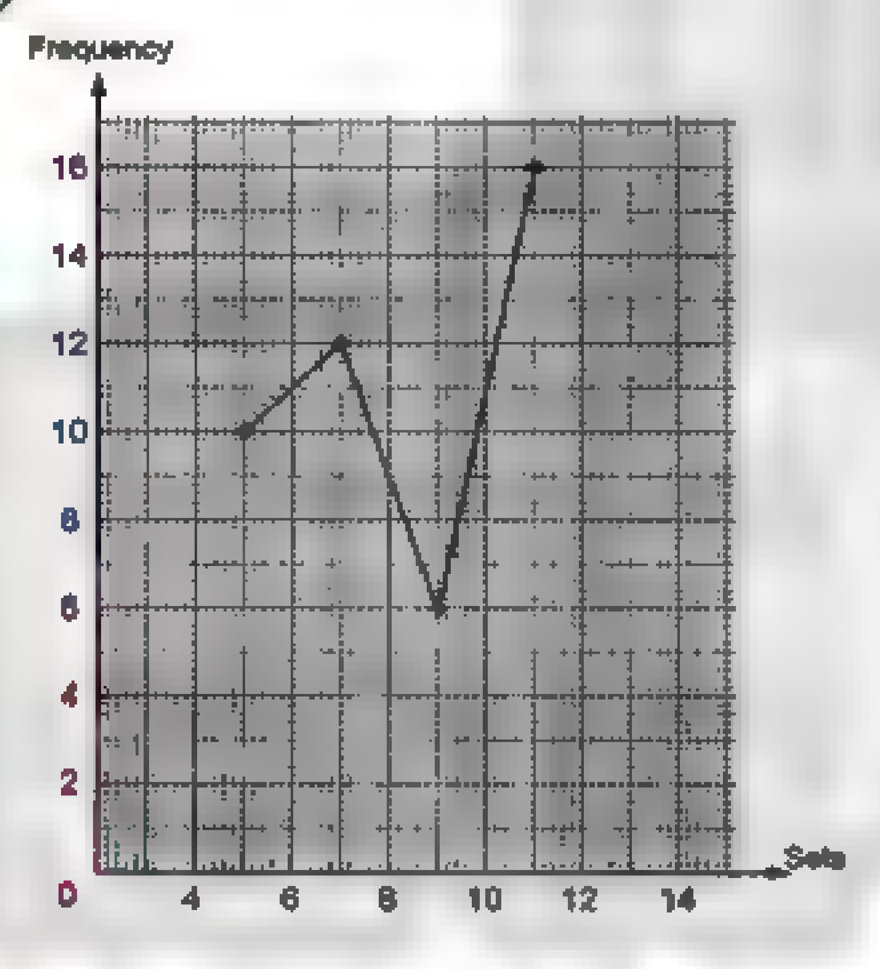
(2) $2x-3=5$ $2x=5+3$ $2x=8$

$x=8\div 2$ $x=4$

5 (a)



(b)



Model 7

1 (a) < (b) 132 (c) odd (d) $\in$

2 (a) E (b) 2 (c) flip (d) $15 - x$

3 (a) $x = \{3, 4, 5, 6, 7, 8\}$

0 1 2 3 4 5 6 7 8 9

(b) The numbers are : $(x + 8)$, $(x + 10)$, $(x + 12)$, $(x + 14)$ and $(x + 16)$

4 (a) The area of the rhombus $= \frac{1}{2} \times 6 \times 8$
$= 24 \text{ cm}^2$

The area of the square $= \frac{1}{2} \times 7 \times 7$
$= 24.5 \text{ cm}^2$

The area of the square is greater.

(b) The length of $\overline{BC} = 32 \div 4 = 8$ cm.

The area of $\Delta ABE = \frac{1}{2} \times 3 \times 4 = 6 \text{ cm}^2$.

The area of the figure AECD $= 32 - 6$
$= 26 \text{ cm}^2$.

5 (a)



The number of religious books $= \frac{1}{4} \times 800$
$= 200$ books.

The number of literary books $= \frac{1}{4} \times 800$
$= 200$ books

The number of scientific books $= \frac{1}{2} \times 800$
$= 400$ books.

(b) (1) $\overrightarrow{EF}$ (2) $\overrightarrow{DF}$ (3) $\overrightarrow{BF}$ (4) $\overleftrightarrow{BF}$



Model 8

1 (a) $\subset$ (b) $x - 3$ (c) 1 (d) flip

2 (a) 3ℓ (b) $\varnothing$ (c) 81 (d) 28

3 (a) The area of the parallelogram $= 12 \times 5$
$= 60 \text{ cm}^2$.

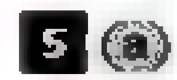
The height $= 60 \div 6 = 10$ cm.

(b) The perimeter $= \left(\frac{1}{2} \times 70 \times \frac{22}{7}\right) + 70$
$= 110 + 70 = 180$ cm.

4 (a) $75 = 5x + 7 \times 10$
$5x = 75 - 70$
$x = 5 \div 5$

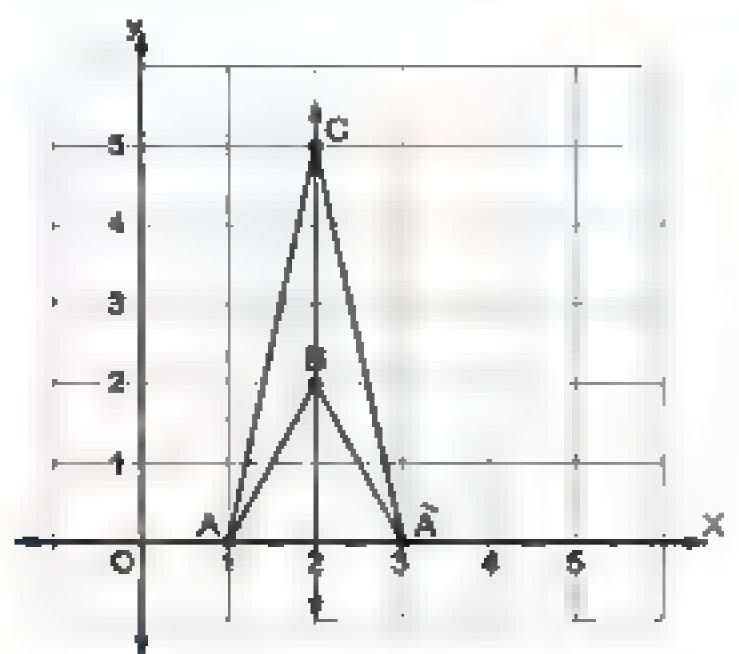
$5x + 70 = 75$
$5x = 5$
$x = 1$

(b) a b c d



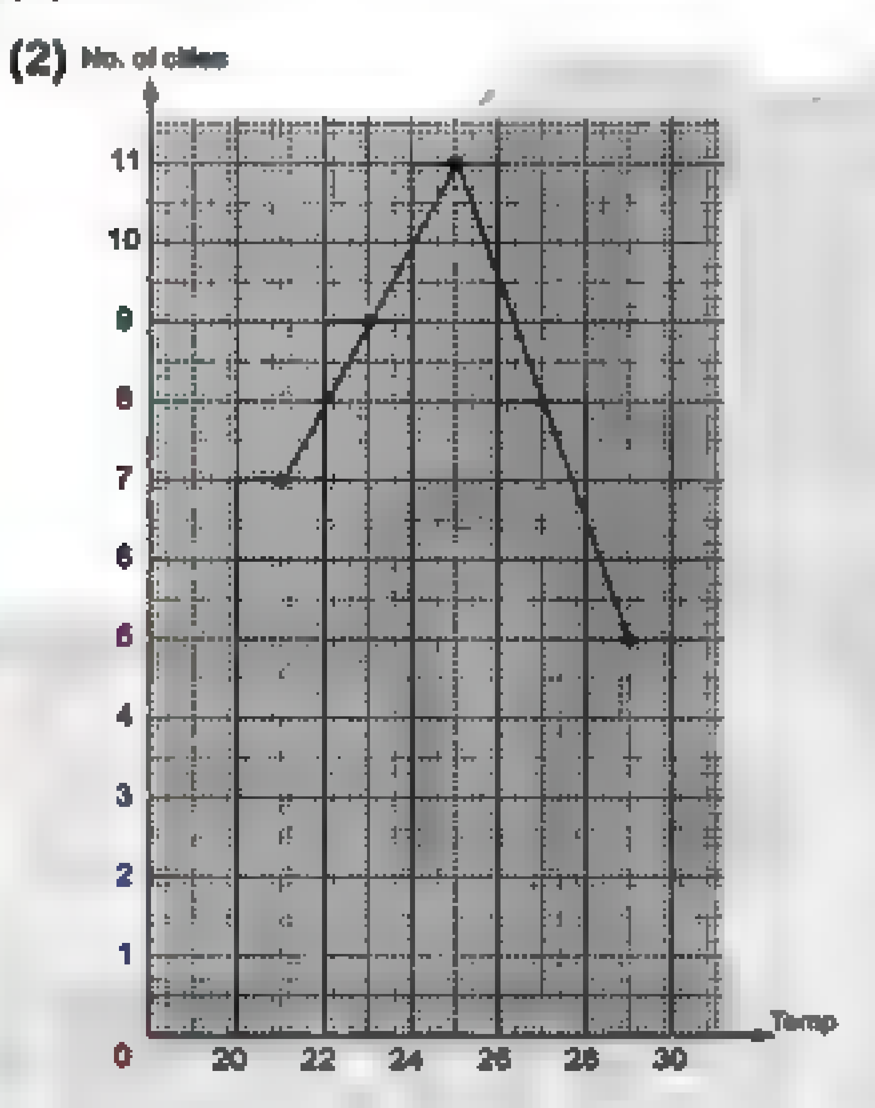
Answers of final examinations

5 (a)



(b) (1) 16

(2)



(3) $4 \times 49 \times 25 = 4 \times 25 \times 49$

$= (4 \times 25) \times 49$

$= 100 \times 49 = 4\ 900$

(4) $156 + 871 + 344 + 129$

$= 156 + 344 + 871 + 129$

$= (156 + 344) + (871 + 129)$

$= 500 + 1\ 000 = 1\ 500$

4 (a) The area of Δ ABC $= \frac{1}{2} \times 6 \times 8 = 24$ cm^2.

The length of $\overline{AD} = \frac{24}{\frac{1}{2} \times 10} = 4.8$ cm.

(b) The area of the rhombus $= \frac{1}{2} \times 6 \times 8$

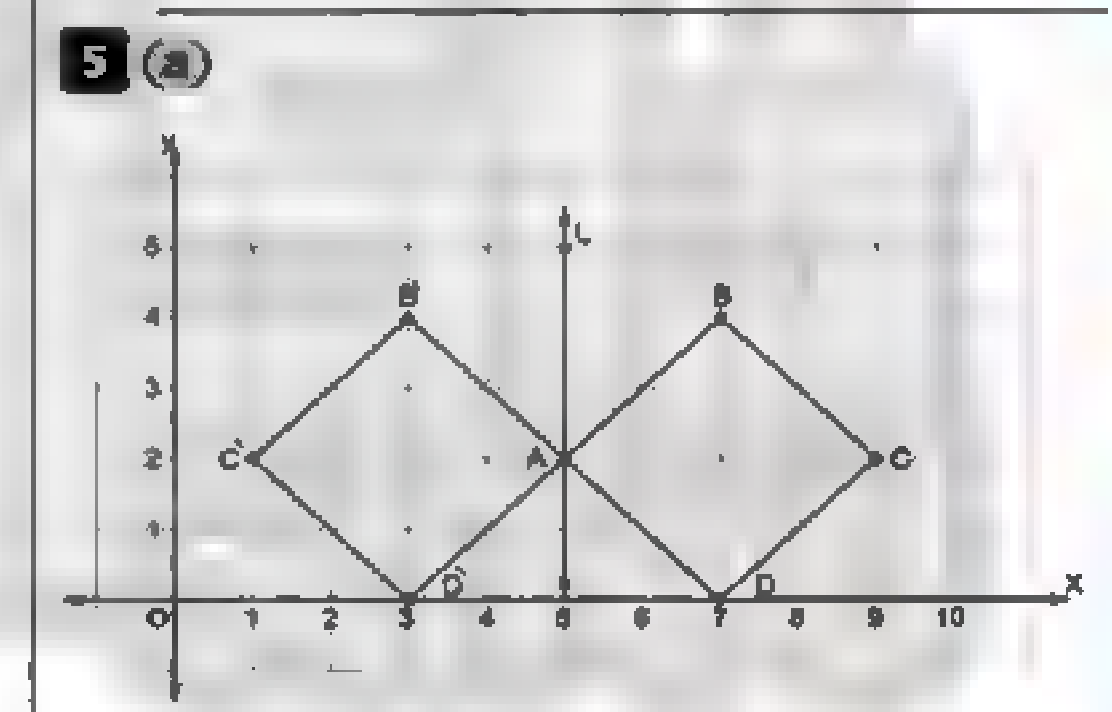
$= 24$ cm^2.

The area of the parallelogram $= 4 \times 8$

$= 32$ cm^2.

The area of the parallelogram is greater.

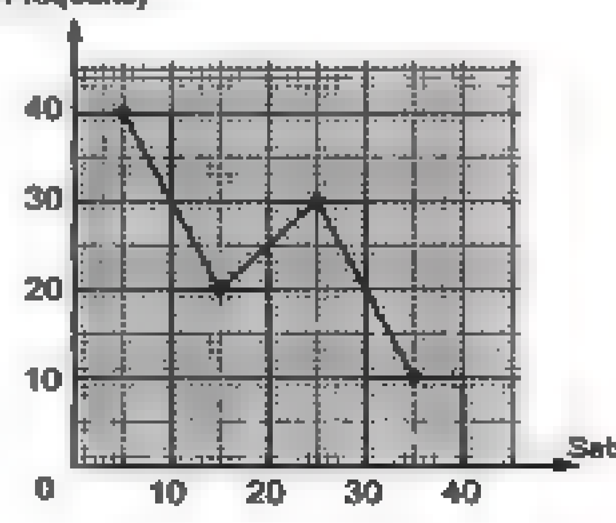
5 (a)



(1) A (5 , 2) (2) B́ (3 , 4)

(3) Ć (1 , 2) (4) D́ (3 , 0)

(b)



Model 9

1 (a) 0 (b) 30 (c) $10 - x$ (d) 1

2 (a) 0 (b) 5

(c) additive identity element (d) (4 , 7)

3 (a) $3x - 1 = 8$ $3x = 8 + 1$ $3x = 9$

$x = 9 \div 3$ $x = 3$

(b) (1) $18 \times 99 = 18 \times (100 - 1)$

$= 18 \times 100 - 18 \times 1$

$= 1800 - 18 = 1782$

(2) $56 \times 1002 = 56 \times (1000 + 2)$

$= 56 \times 1000 + 56 \times 2$

$= 56\ 000 + 112 = 56\ 112$



Model 10

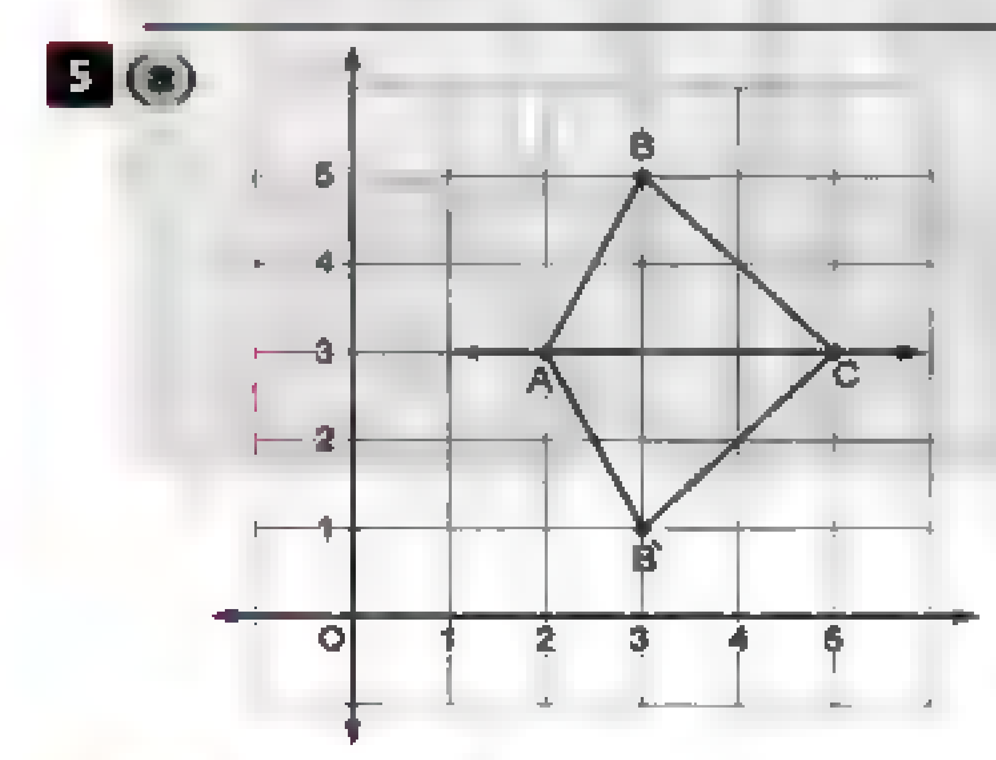
1 (a) $\subset$ (b) $4x$
(c) 3 (d) reflection

2 (a) {1 , 2 , 3 , 4} (b) 2 Z − 5
(c) 20 (d) odd

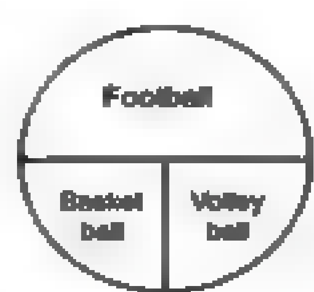
3 (a) The area of one square $= \frac{1}{2} \times 9 \times 9$
$= 40.5 \text{ cm}^2$
The area of the left part
$= 312.5 - (7 \times 40.5) = 29 \text{ cm}^2$
(b) The radius length $= \frac{66}{2 \times \frac{22}{7}} = 10.5$ cm.

4 (a) (1) $25 \times 4 \times 9\,892 = (25 \times 4) \times 9\,892$
$= 100 \times 9\,892 = 989\,200$
(2) $862 + 138 + 199 + 801$
$= (862 + 138) + (199 + 801)$
$= 1\,000 + 1\,000 = 2\,000$
(b) $2x + 3 = 15$ $2x = 15 - 3$
$2x = 12$ $x = 12 \div 2$
$x = 6$

5 (a)



(b) Football $= \frac{20}{40} = \frac{1}{2}$
Basketball $= \frac{10}{40} = \frac{1}{4}$
Volleyball $= \frac{10}{40} = \frac{1}{4}$



Model 11

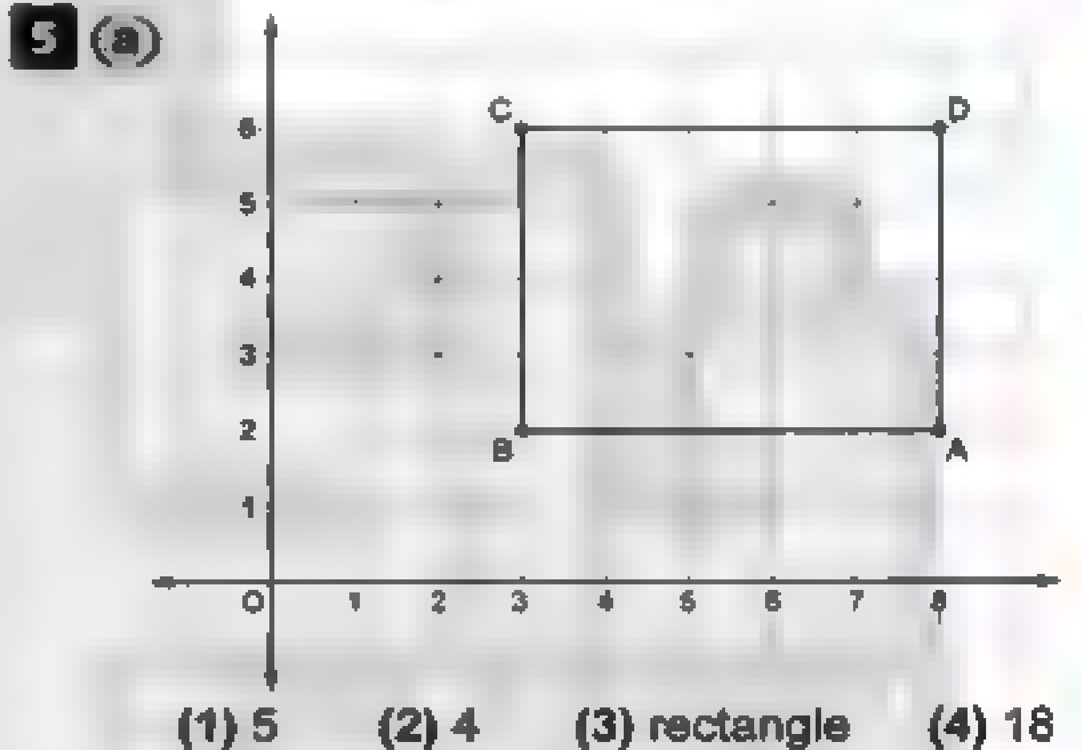
1 (a) $\notin$ (b) 0
(c) translation (d) $2\pi r$

2 (a) 3 (b) 3 , 6 , 12 , 24 , 48 , 96
(c) $2(x + y)$ (d) (2 , 5)

3 (a) $x + 13$, $x + 11$, $x + 9$, $x + 7$ and $x + 5$
(b) The area of the parallelogram ABCD
$= 10 \times 12 = 120 \text{ cm}^2$
The length of $\overline{BC} = \frac{120}{8} = 15$ cm.

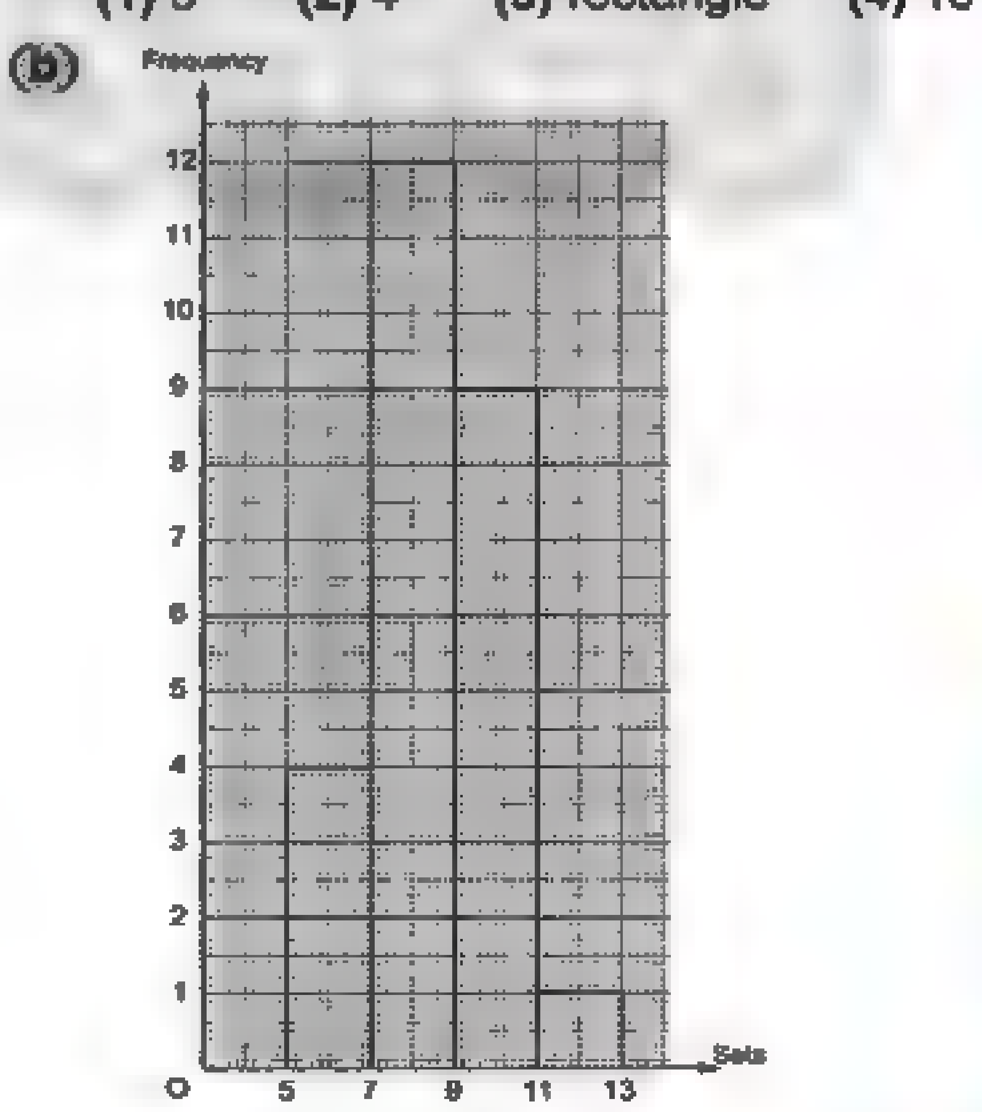
4 (a) (1) $3x + 5 = 26$ $3x = 26 - 5$
$3x = 21$ $x = 21 \div 3$ $x = 7$
(2) $\frac{1}{5}x - 2 = 10$ $\frac{1}{5}x = 10 + 2$
$\frac{1}{5}x = 12$ $x = 12 \div \frac{1}{5}$ $x = 60$
(b) The height $= \frac{6}{\frac{1}{2} \times 3} = 4$ cm.

5 (a)



(1) 5 (2) 4 (3) rectangle (4) 18

(b)



Answers of final examinations

Model 12

1 (a) odd (b) 4 (c) 20 (d) <

2 (a) 1 (b) $10 - x$ (c) 7 (d) {2}

3 (a) The circumference of the semicircle

$= \frac{1}{2} \times 70 \times \frac{22}{7} = 110$ cm.

The perimeter of the window

$= 110 + 70 + 70 + 70 = 320$ cm.

(b) The area of the square $= 70 \times 70$

$= 4\,900 \text{ cm}^2$.

The area of the semicircle

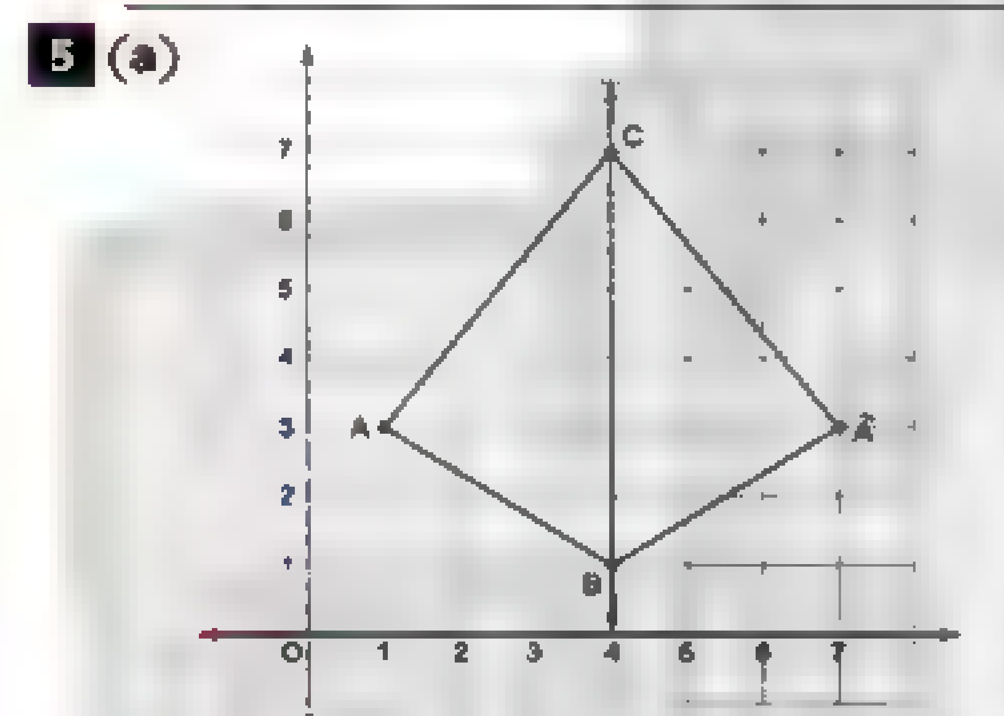
$= 6825 - 4\,900 = 1\,925 \text{ cm}^2$.

4 (a) $38 + 47 + 62 + 53 = 38 + 62 + 47 + 53$

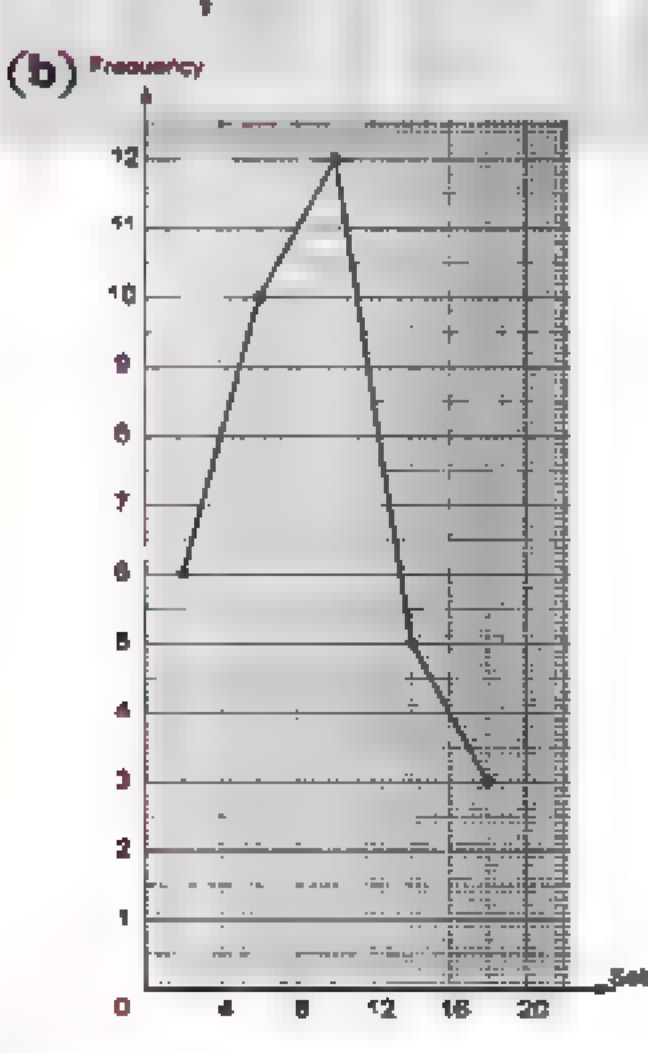
$= (38 + 62) + (47 + 53) = 100 + 100 = 200$

(b) $x + 45 = 75$ $x = 75 - 45$ $x = 30$

5 (a)



(b)



Model 13

1 (a) $\not\subset$ (b) $2x - 7$ (c) 0 (d) 15

2 (a) 81 , 243 (b) $35 - x$

(c) 96 (d) translation

3 (a) The perimeter $= \left(3.5 \times \frac{22}{7}\right) + 7 + 7 = 25$ cm.

(b) The area $= 8 \times 5 = 40 \text{ cm}^2$.

4 (a) (1) $519 \times 99 = 519 \times (100 - 1)$

$= 519 \times 100 - 519 \times 1$

$= 51900 - 519 = 51381$

(2) $316 \times 1001 = 316 \times (1000 + 1)$

$= 316 \times 1000 + 316 \times 1$

$= 316000 + 316 = 316316$

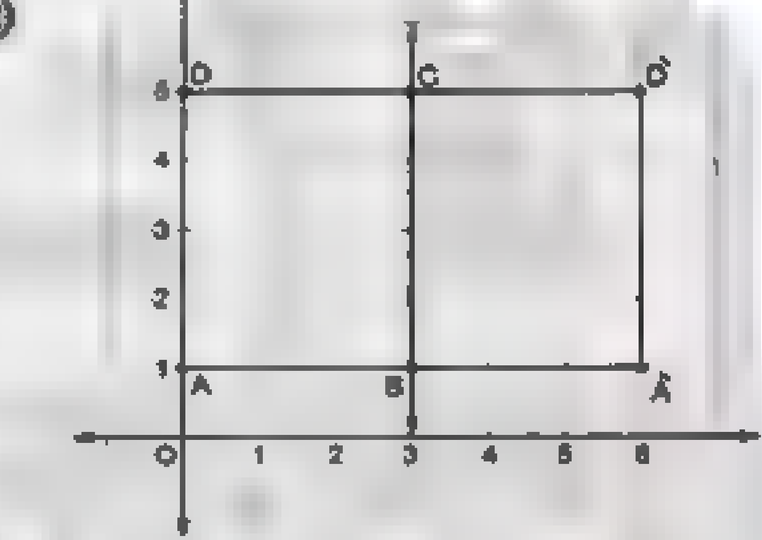
(b) (1) $\frac{1}{5}x - 1 = 10$ $\frac{1}{5}x = 10 + 1$

$\frac{1}{5}x = 11$ $x = 11 \div \frac{1}{5}$ $x = 55$

(2) $5x + 1 = 16$ $5x = 16 - 1$

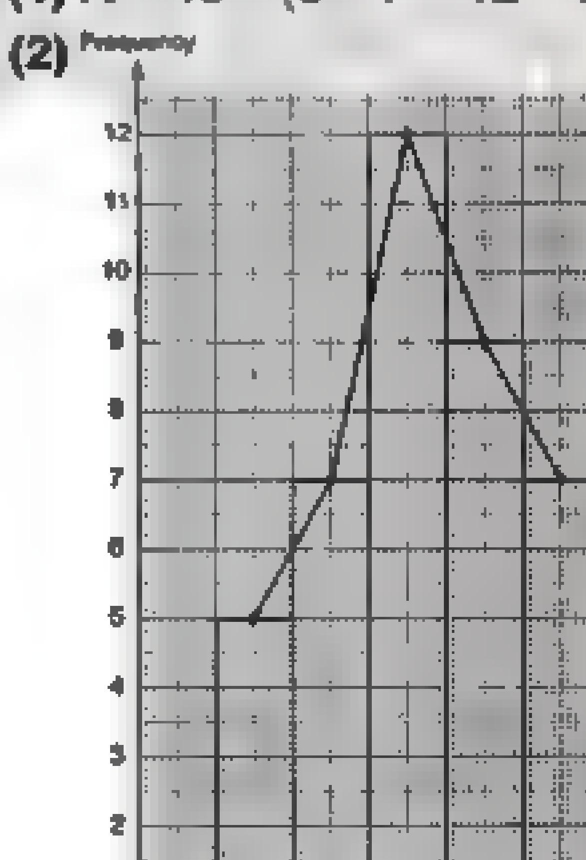
$5x = 15$ $x = 15 \div 5$ $x = 3$

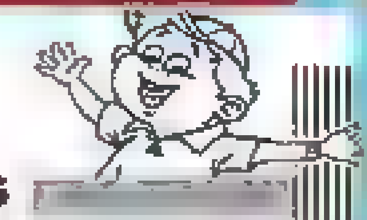
5 (a)



(b) (1) $A = 40 - (5 + 7 + 12 + 7) = 9$

(2)





Model 14

1 (a) {0} (b) y + 5 (c) 0 (d) ∈

2 (a) 6 , 2 (b) 6 (c) π (d) 5

3 (a) (1) 612 + 154 + 88 + 846

= 612 + 88 + 154 + 846 (commutative property)

= (612 + 88) + (154 + 846) (Associative property)

= 700 + 1 000 = 1 700

(2) 125 × 19 × 8 = 125 ×8 × 19 (Commutative property)

= (125 × 8) × 19 (Associative property)

= 1 000 × 19 = 19 000

(b) $2x - 4 = 8$ $2x = 8 + 4$

$2x = 12$ $x = 12 \div 2$ $x = 6$

4 (a) The area of the triangle ABE = $\frac{1}{2} \times 4 \times 4$

= 8 cm².

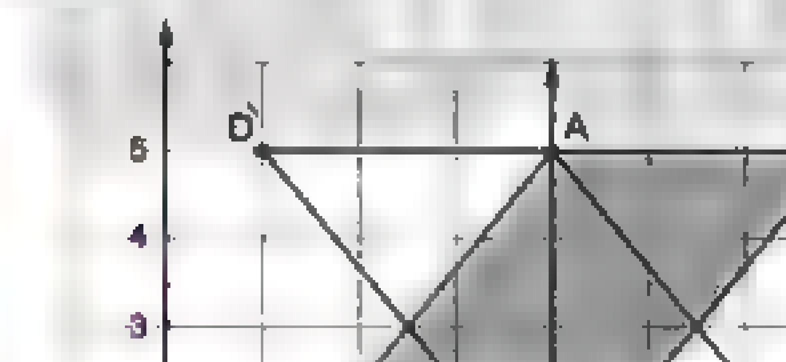
The area of the shaded part = 32 – 8

= 24 cm².

(b) The perimeter = $\left(35 \times \frac{22}{7}\right) + 70 + 70$

= 250 cm.

5 (a)



(1) Parallelogram

The area = 3 × 4 = 12 square units.

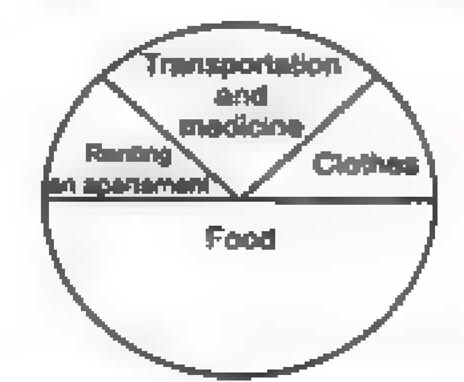
(2) Drawn in the figure.

(b) Clothes = $\frac{200}{1\,600} = \frac{1}{8}$

Food = $\frac{800}{1\,600} = \frac{1}{2}$

Transportation and medicine = $\frac{400}{1\,600} = \frac{1}{4}$

Renting on apartement = $\frac{200}{1\,600} = \frac{1}{8}$



Model 15

1 (a) ℕ (b) 11 (c) 0 (d) <

2 (a) 0 , 1 (b) 3 y + 2 (c) (5 , 8) (d) 7

3 (a) Dina has x pounds and her father gave her 5 pounds , then the total what she has is 12 pounds.

$x + 5 = 12$ $x = 12 - 5$ $x = 7$

(b) 99 × 15 = (100 – 1) × 15 = 15 × 100 – 15 × 1

= 1 500 – 15 = 1 485

4 (a) The area of the garden = $\frac{1}{2} \times 8 \times 7$

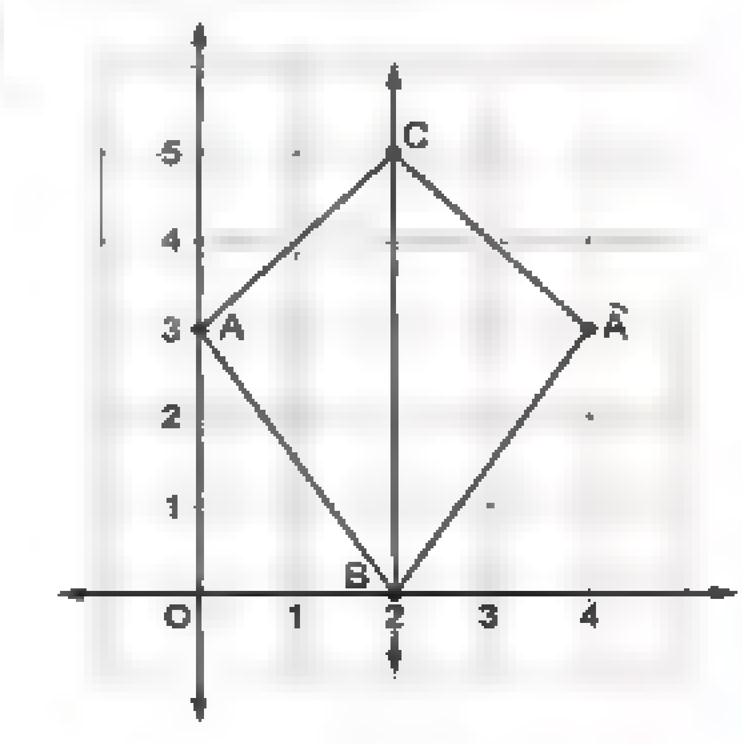
= 28 m².

The area of the land = 5 × 10 = 50 m².

The area of the land is greater.

(b) The diameter length = 88 ÷ $\frac{22}{7}$ = 28 cm.

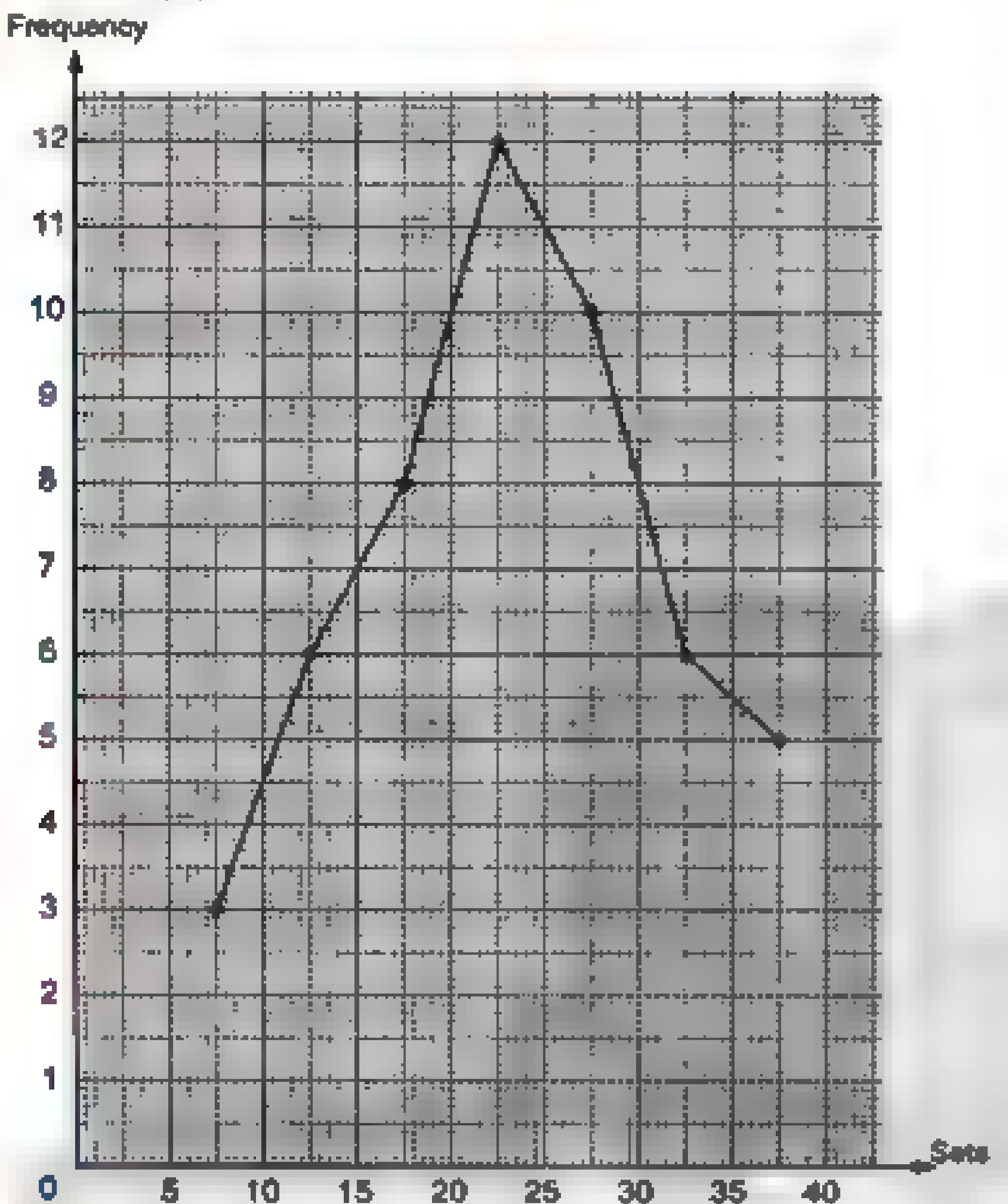
5 (a)



Answers of final examinations

(b) (1) 11 students.

(2)



Model 16

1 (a) < (b) $x + 5$ (c) 2 (d) $\subset$

2 (a) {1 , 2 , 3 , 4} (b) 5
(c) 96 (d) translation

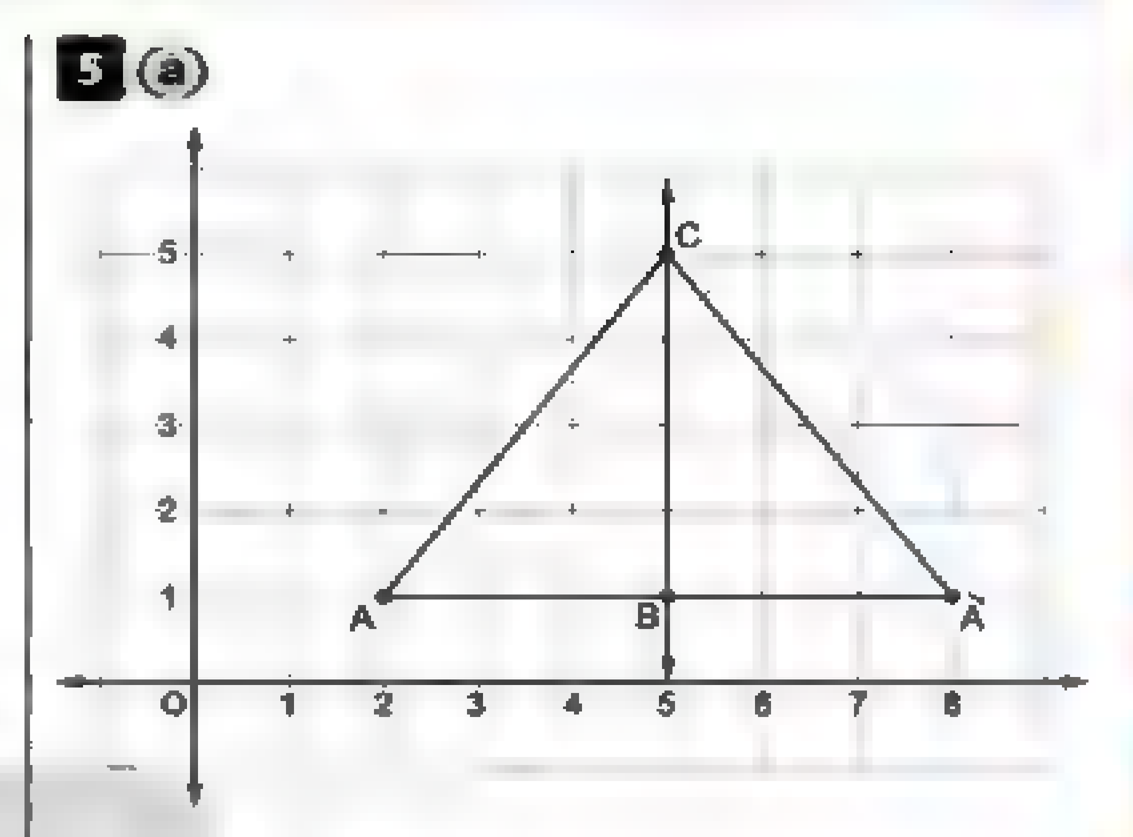
3 (a) The length of $\overline{BC} = 6.5 - 2 = 4.5$ cm.
The area of the triangle ABC $= \frac{1}{2} \times 4.5 \times 3.2$
$= 7.2$ cm².

(b) The area of the rhombus $= \frac{1}{2} \times 7 \times 9$
$= 31.5$ cm².
The side length of the rhombus $= 31.5 \div 5$
$= 6.3$ cm.

4 (a) $48 + 637 + 52 + 363 = 48 + 52 + 637 + 363$
$= (48 + 52) + (637 + 363)$
$= 100 + 1\,000 = 1\,100$

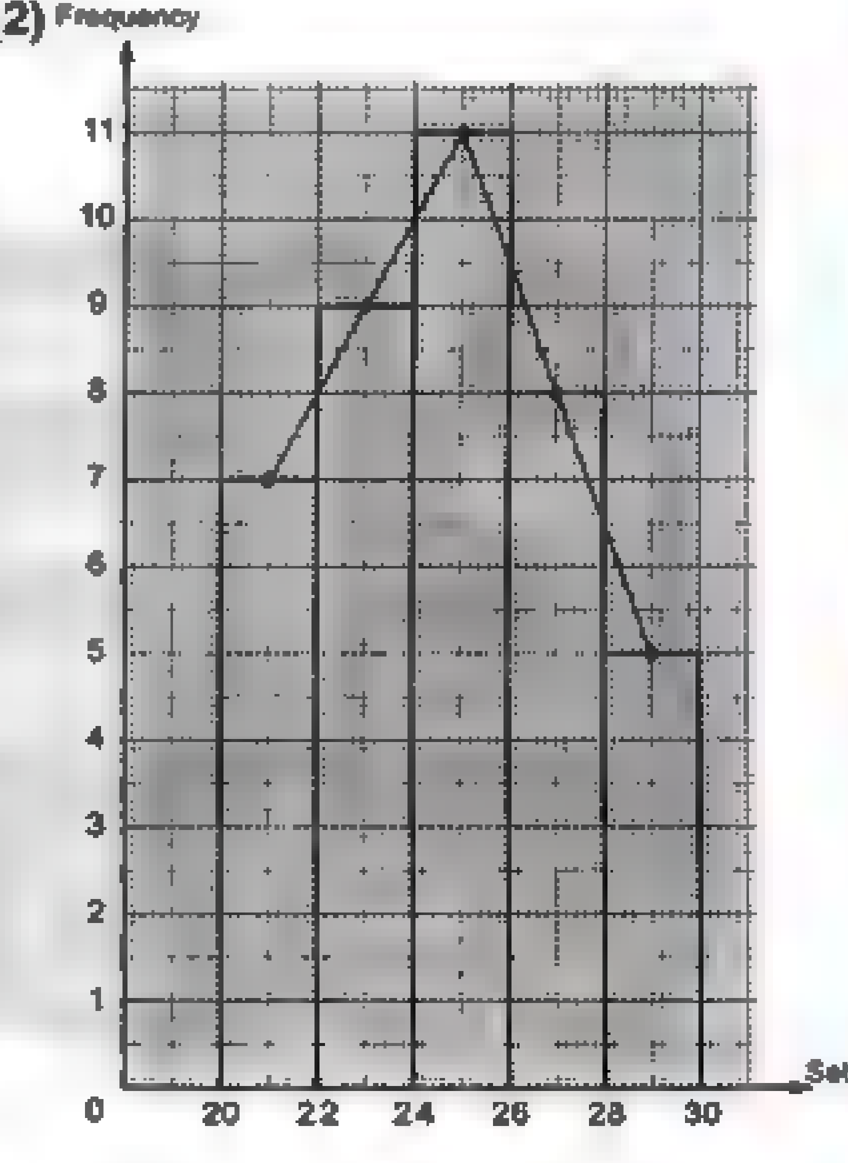
(b) $\frac{1}{3} x - 1 = 3$ $\frac{1}{3} x = 3 + 1$
$\frac{1}{3} x = 4$ $x = 4 \div \frac{1}{3}$ $x = 12$

5 (a)



(b) (1) 16 cities.

(2)



Model 17

1 (a) even (b) zero (c) $2x - 3$ (d) 25

2 (a) 9 (b) 4 , 3
(c) 40 (d) $(x + y) \times 2$

3 (a) $x = \{2 , 3 , 4 , 5 , 6\}$

0 1 2 3 4 5 6 7 8

(b) $2x + 5 = 17$ $2x = 17 - 5$
$2x = 12$ $x = 12 \div 2$ $x = 6$

4 (a) The perimeter $= 2 \times 7 \times \frac{22}{7} = 44$ cm.

(b) The area of the parallelogram $= 34.75 \times 28.17$
$= 978.9075 \simeq 978.91$ cm^2.

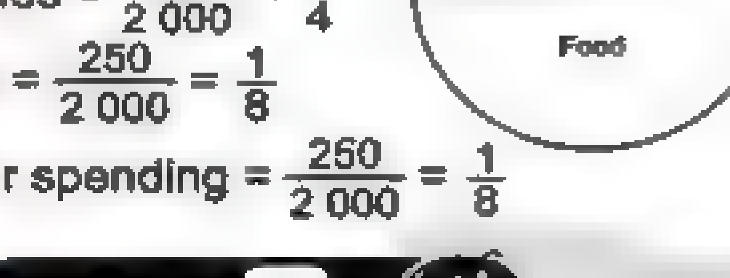
5 (a) (1) $\overleftrightarrow{EF}$ (2) $\overrightarrow{DF}$ (3) $\overrightarrow{BF}$ (4) $\overline{BF}$

(b) Food $= \frac{1\,000}{2\,000} = \frac{1}{2}$

Clothes $= \frac{500}{2\,000} = \frac{1}{4}$

Rent $= \frac{250}{2\,000} = \frac{1}{8}$

Other spending $= \frac{250}{2\,000} = \frac{1}{8}$



Model 18

1 (a) $\in$ (b) 9 (c) 3 (d) O

2 (a) 10 (b) 34 (c) 4 (d) 48

3 (a) The corresponding height to the base $\overline{AE}$ in the triangle ABE $= \frac{60 \times 2}{12} = 10$ cm.
The area of the parallelogram ABCD
$= 10 \times 24 = 240$ cm^2.

(b) The length of $\overline{AB} = 240 \div 15 = 16$ cm.

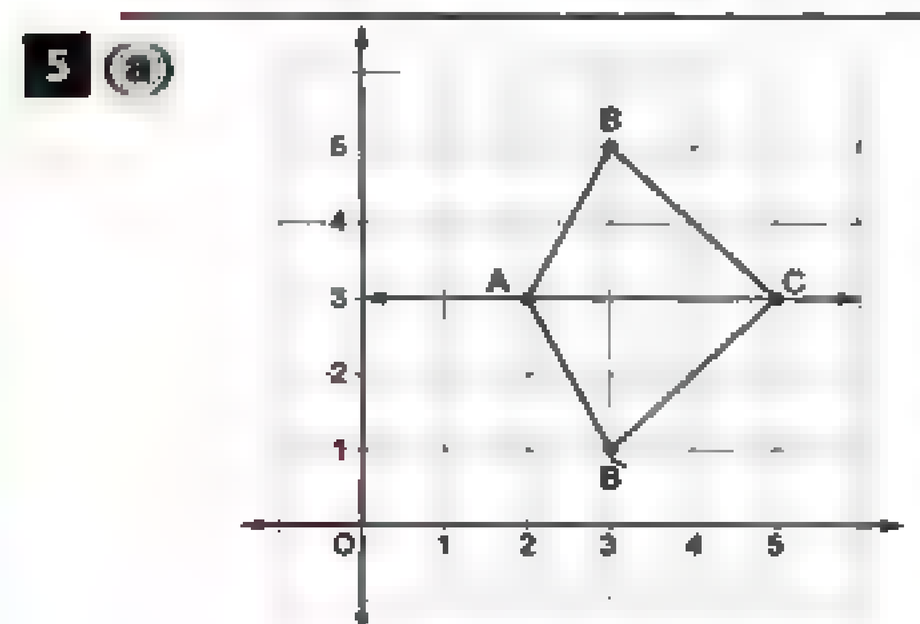
(c) The perimeter of the parallelogram
ABCD $= (16 + 24) \times 2 = 80$ cm.

4 (a) (1) $(64 + 135 + 36 + 65) \times 17$
$= (64 + 36 + 135 + 65) \times 17$
$= \big((64 + 36) + (135 + 65)\big) \times 17$
$= (100 + 200) \times 17 = 300 \times 17 = 5\,100$

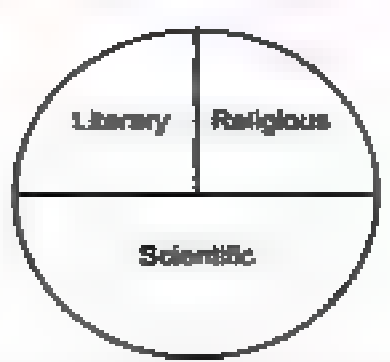
(2) $84\,(25 \times 4 + 125 \times 8) = 84\,(100 + 1\,000)$
$= 84 \times 1\,100$
$= 92\,400$

(b) $3x + 8 = 29$ $3x = 29 - 8$
$3x = 21$ $x = 21 \div 3$ $x = 7$

5 (a)



(b)



The number of religious books
$= \frac{1}{4} \times 800 = 200$ books.
The number of literary books $= \frac{1}{4} \times 800$
$= 200$ books.
The number of scientific books
$= \frac{1}{2} \times 800 = 400$ books.

Model 19

1 (a) $\subset$ (b) 36
(c) $P \div 4$ (d) reflection

2 (a) 0 (b) odd (c) 2 , 8 (d) 6

3 (a) The area of the rhombus
$= \frac{1}{2} \times 12 \times 16 = 96$ cm^2.
The side length of the rhombus
$= \frac{96}{9.6} = 10$ cm.

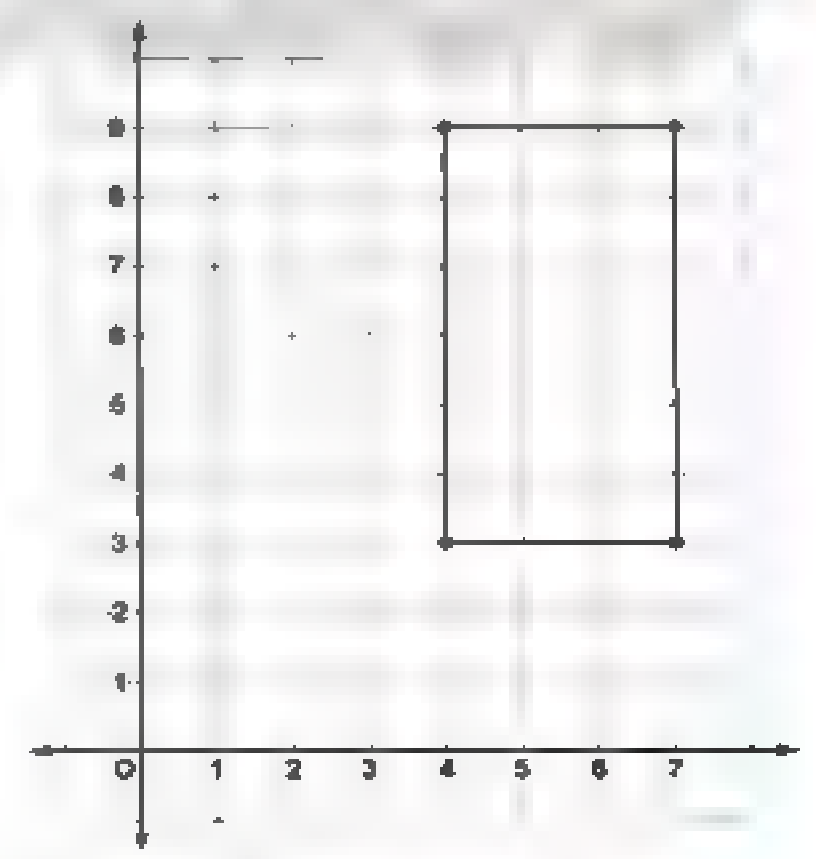
(b) (1) $25 \times 38 \times 4 = 25 \times 4 \times 38$
$= (25 \times 4) \times 38$
$= 100 \times 38 = 3\,800$

(2) $44 + 66 + 56 + 34 = 44 + 56 + 66 + 34$
$= (44 + 56) + (66 + 34) = 100 + 100 = 200$

4 (a) $14 - 3x = 8$

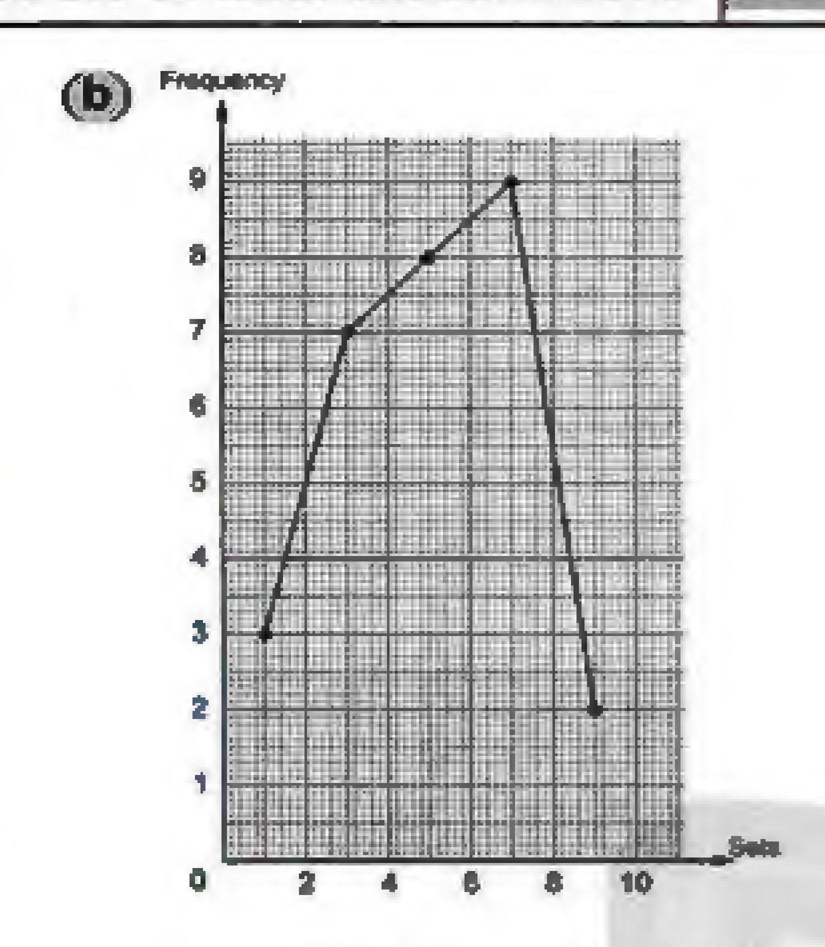
(b) The perimeter $= \left(35 \times \frac{22}{7}\right) + 70 = 180$ cm.

5 (a)

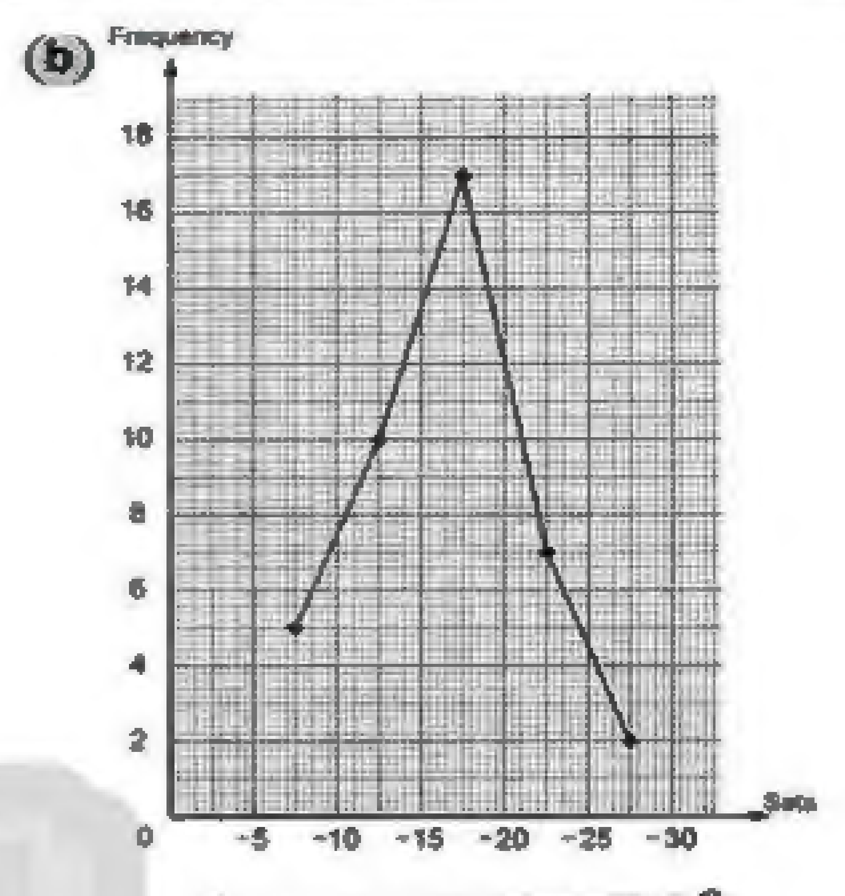


The figure is a rectangle.

(b)



(b)



Model 20

1 (a) 4 (b) 2 (c) $7x - 3$ (d) 25

2 (a) 20 (b) $\{2, 3, 4, 5, 6\}$
(c) 0 (d) reflection

3 (a) $38 + 47 + 62 + 53 = 38 + 62 + 47 + 53$
$= (38 + 62) + (47 + 53) = 100 + 100 = 200$

(b) The area of the triangle $= \frac{1}{2} \times 18 \times 12$
$= 108 \text{ cm}^2$.

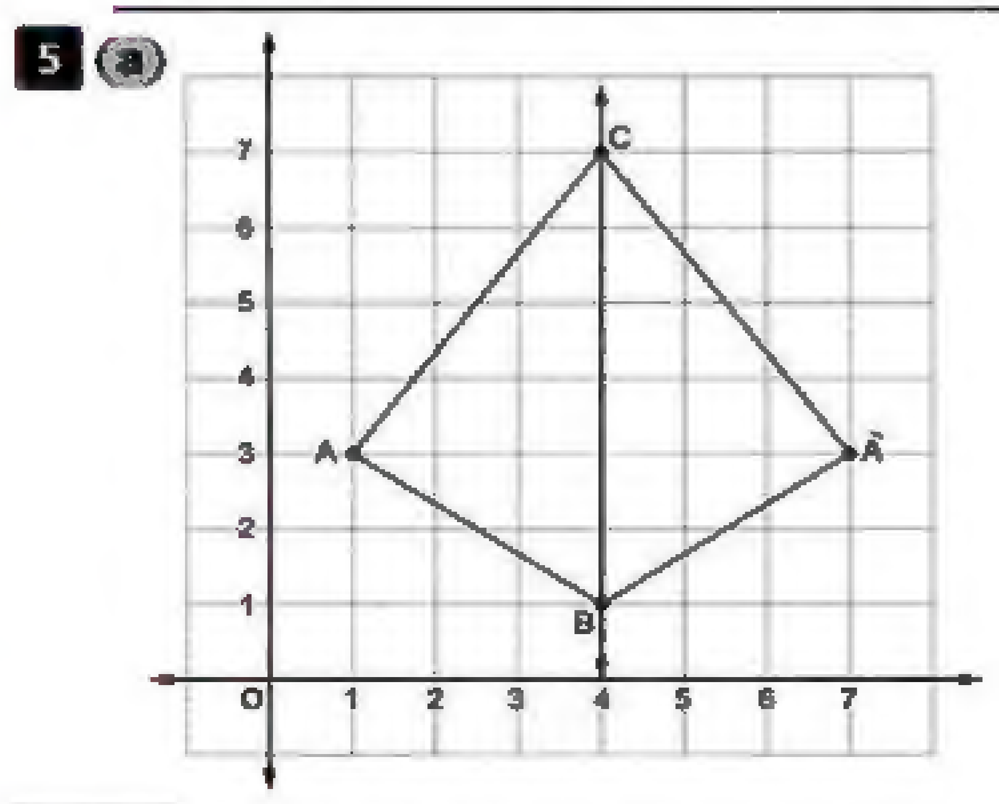
The area of the rhombus $= \frac{1}{2} \times 24 \times 8$
$= 96 \text{ cm}^2$.

The area of the triangle is greater.

4 (a) The radius length $= \frac{88}{2 \times \frac{22}{7}} = 14$ cm.

(b) $3x + 5 = 26$ $3x = 26 - 5$
$3x = 21$ $x = 21 \div 3$ $x = 7$

5 (a)



Model 21

1 (a) $\not\subset$ (b) O (c) 2 (d) 10

2 (a) $2x + 3$ (b) 4 , 6 (c) 24 (d) (4 , 7)

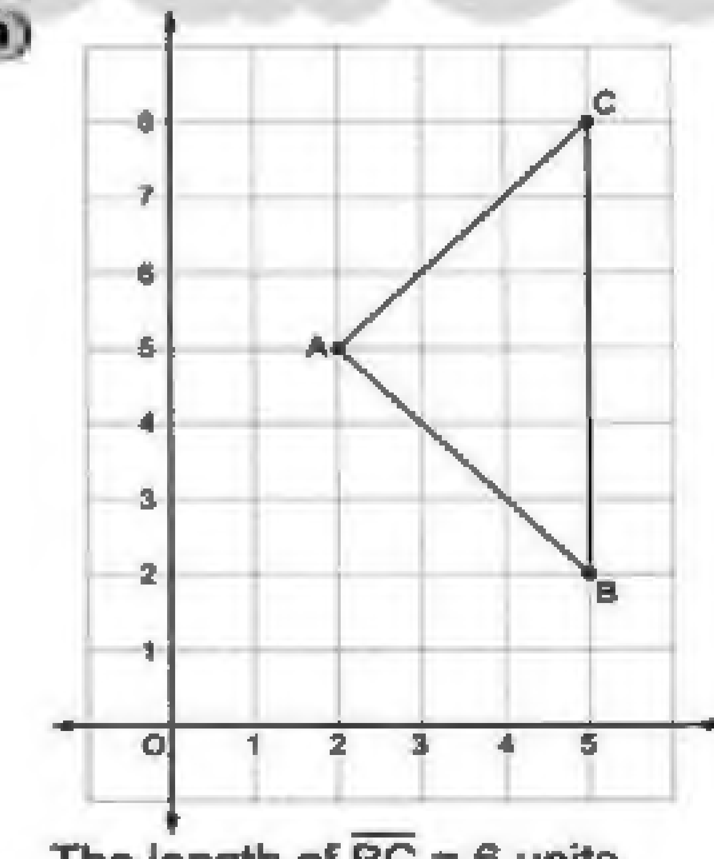
3 (a) The distance areound the figure
$= \left(14 \times \frac{22}{7}\right) + 28 + 28 = 100$ m.

(b) $25 \times 781 \times 4 = 25 \times 4 \times 781$
$= (25 \times 4) \times 781$
$= 100 \times 781 = 78\,100$

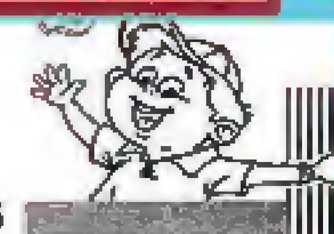
4 (a) (1) $k - 72 = 72$ $k = 72 + 72$ $k = 144$
(2) $6n = 48$ $n = 48 \div 6$ $n = 8$

(b) (1) The area of the parallelogram ABCD
$= 12 \times 10 = 120 \text{ cm}^2$.
(2) The length of $\overline{BC} = 120 \div 8 = 15$ cm.

5 (a)

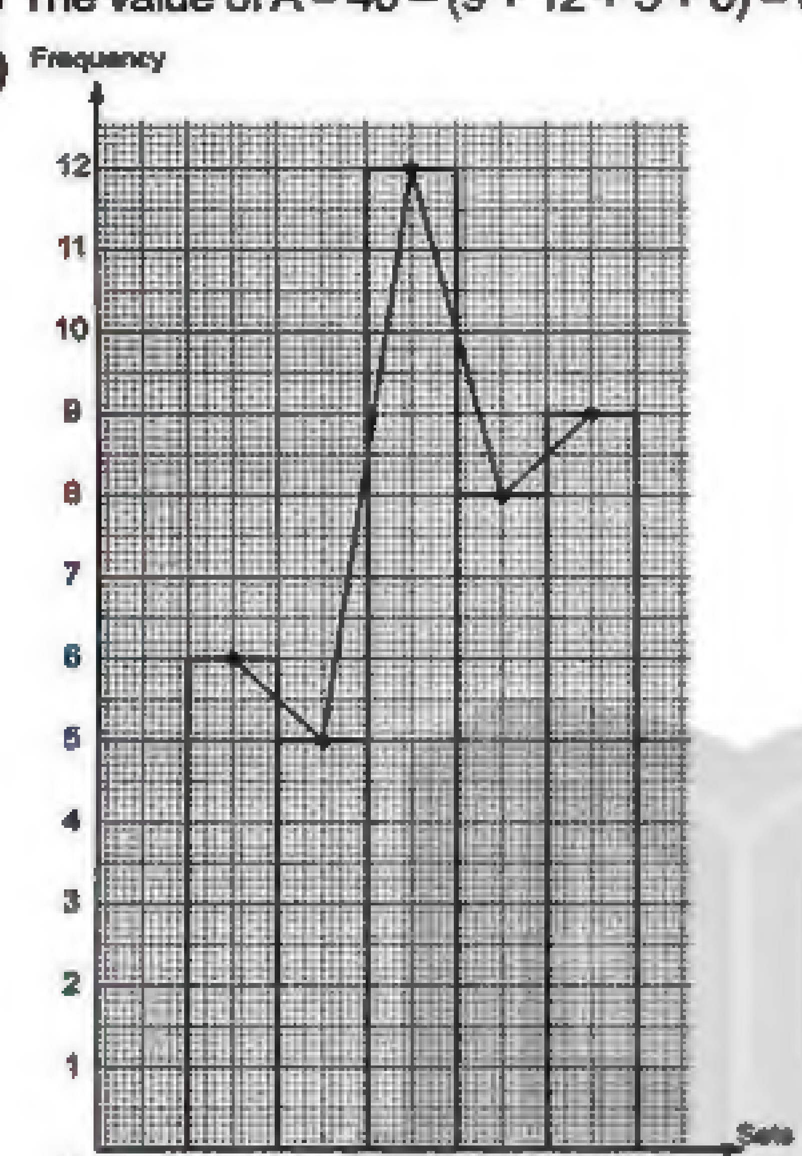


The length of $\overline{BC}$ = 6 units.



(b) (1) The value of A = 40 – (9 + 12 + 5 + 6) = 8

(2)



Model 22

1 (a) $\notin$ (b) even
(c) 2 y – 4 (d) translation

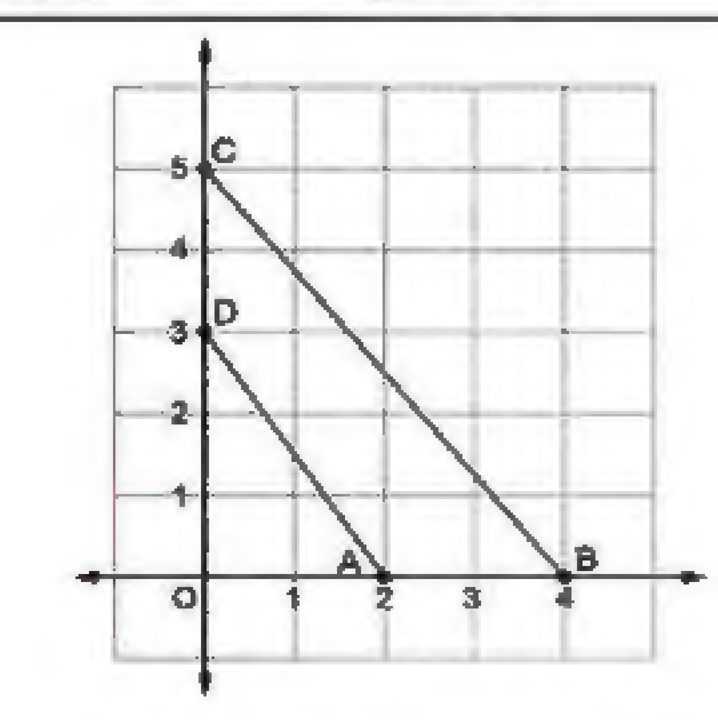
2 (a) 2 (b) odd (c) 66 (d) 3 ℓ

3 (a) (1) 8 × 731 × 125 = 8 × 125 × 731
= (8 × 125) × 731
= 1 000 × 731 = 731 000

(2) 28 + 59 + 72 = 28 + 72 + 59
= (28 + 72) + 59
= 100 + 59 = 159

(b) (1) x + 9 (2) x – 8

4



The area of the triangle OBC = $\frac{1}{2}$ × 4 × 5
= 10 square units.

The area of the triangle OAD = $\frac{1}{2}$ × 2 × 3
= 3 square units.

The area of the figure ABCD = 10 – 3
= 7 square units.

5 (a) 72 = $\frac{1}{2}$ × d × d
144 = d × d
12 × 12 = d × d
d = 12
The length of the diagonal = 12 cm.

(b) Frequency

Model 23

1 (a) ⊂ (b) even (c) 2 (d) {2 , 3}

2 (a) 1 (b) 20 – x (c) 4
(d) the product of the lengths of its two diagonals

3 (a) The area of the triangle = $\frac{1}{2}$ × 12 × 8
= 48 cm^2.

The area of the parallelogram = 5 × 10
= 50 cm^2.

The area of the parallelogram is greater.

Answers of final examinations

(b) (1) $x + 3 = 17$ $x = 17 - 3$ $x = 14$

(2) $2x + 7 = 23$ $2x = 23 - 7$

$2x = 16$ $x = 16 \div 2$ $x = 8$

4 (a) (1) $156 + 871 + 344 + 129$

$= 156 + 344 + 871 + 129$

$= (156 + 344) + (871 + 129)$

$= 500 + 1\,000 = 1\,500$

(2) $27\ (25 \times 4 + 125 \times 8)$

$= 27\ (100 + 1\,000)$

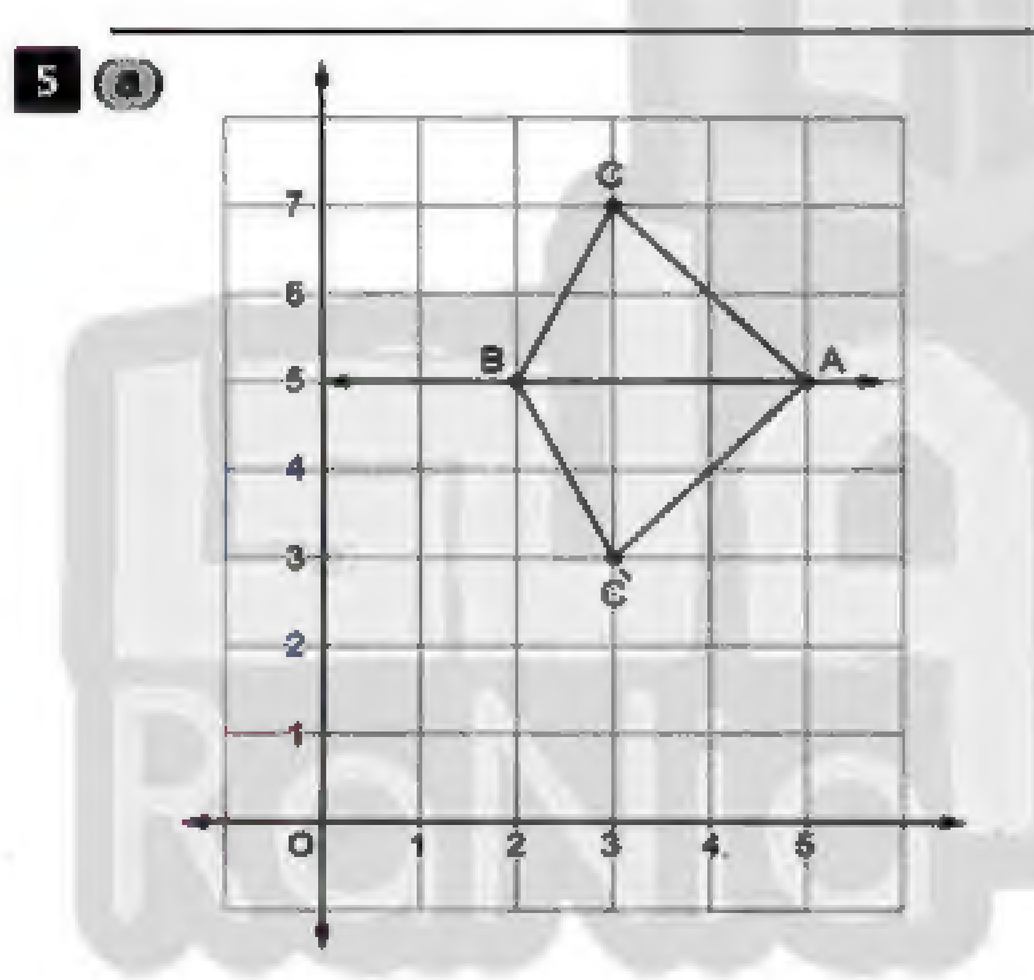
$= 27 \times 100 + 27 \times 1\,000$

$= 2\,700 + 27\,000 = 29\,700$

(b) The circumference of the base $= 7 \times \frac{22}{7}$

$= 22$ cm.

5 (a)



(b) The number of female candidates

$= \frac{3}{4} \times 220 = 165$

Model 24

1 (a) < (b) reflection (c) 0 (d) 8

2 (a) 9 (b) $2z - 8$ (c) π (d) 13 , 21

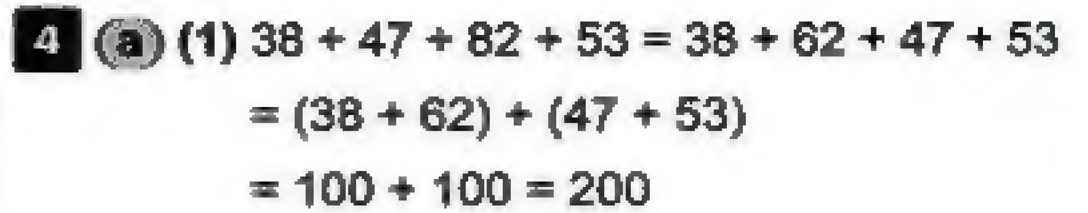
3 (a) The area of the parallelogram ABCD

$= 18 \times 10 = 180$ cm^2.

The length of $\overline{DE} = \frac{180}{12} = 15$ cm.

(b) The distance $= \left(7 \times \frac{22}{7}\right) + 14 = 36$ cm.

4 (a)



(1) $38 + 47 + 82 + 53 = 38 + 62 + 47 + 53$

$= (38 + 62) + (47 + 53)$

$= 100 + 100 = 200$

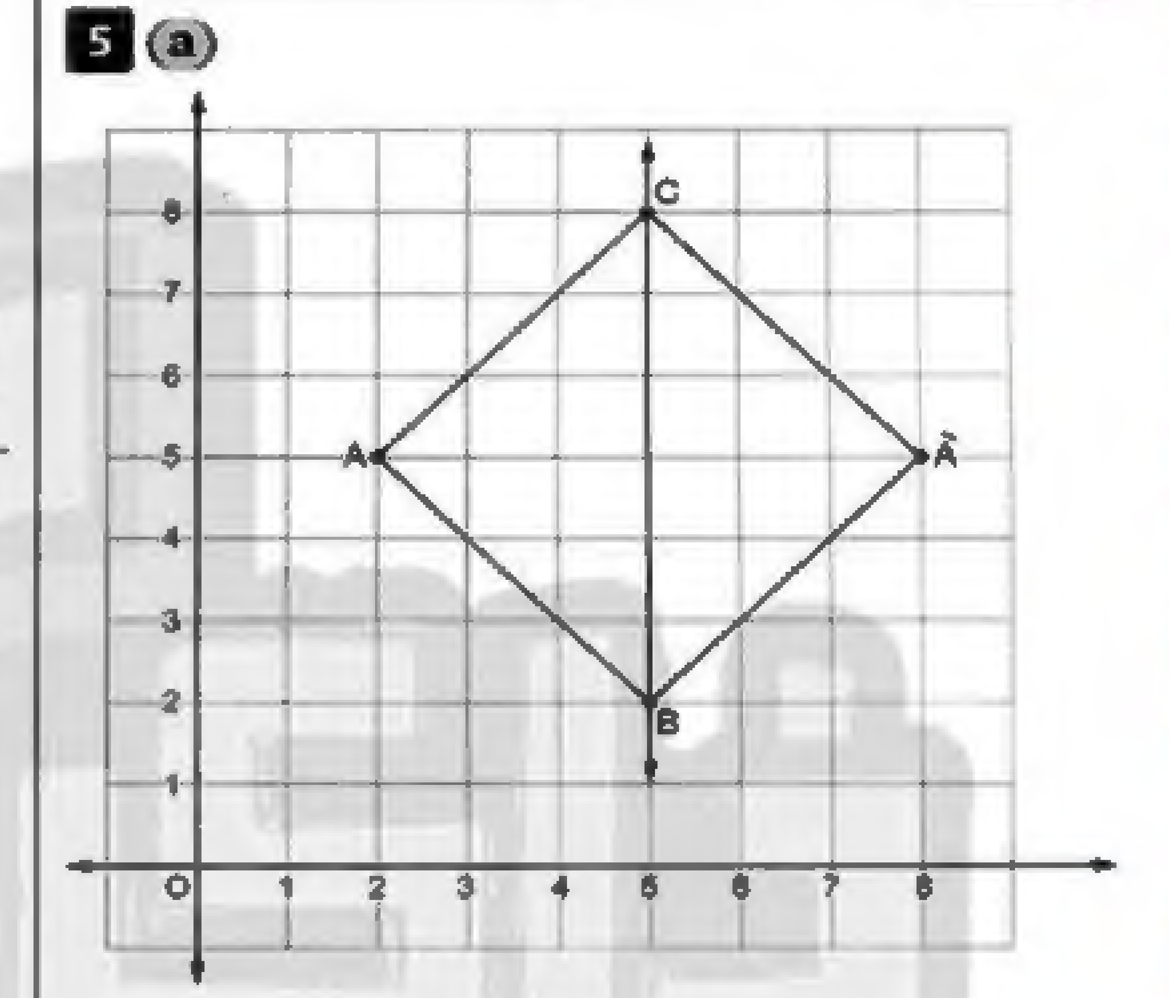
(2) $8 \times 37 \times 125 = 8 \times 125 \times 37$

$= (8 \times 125) \times 37$

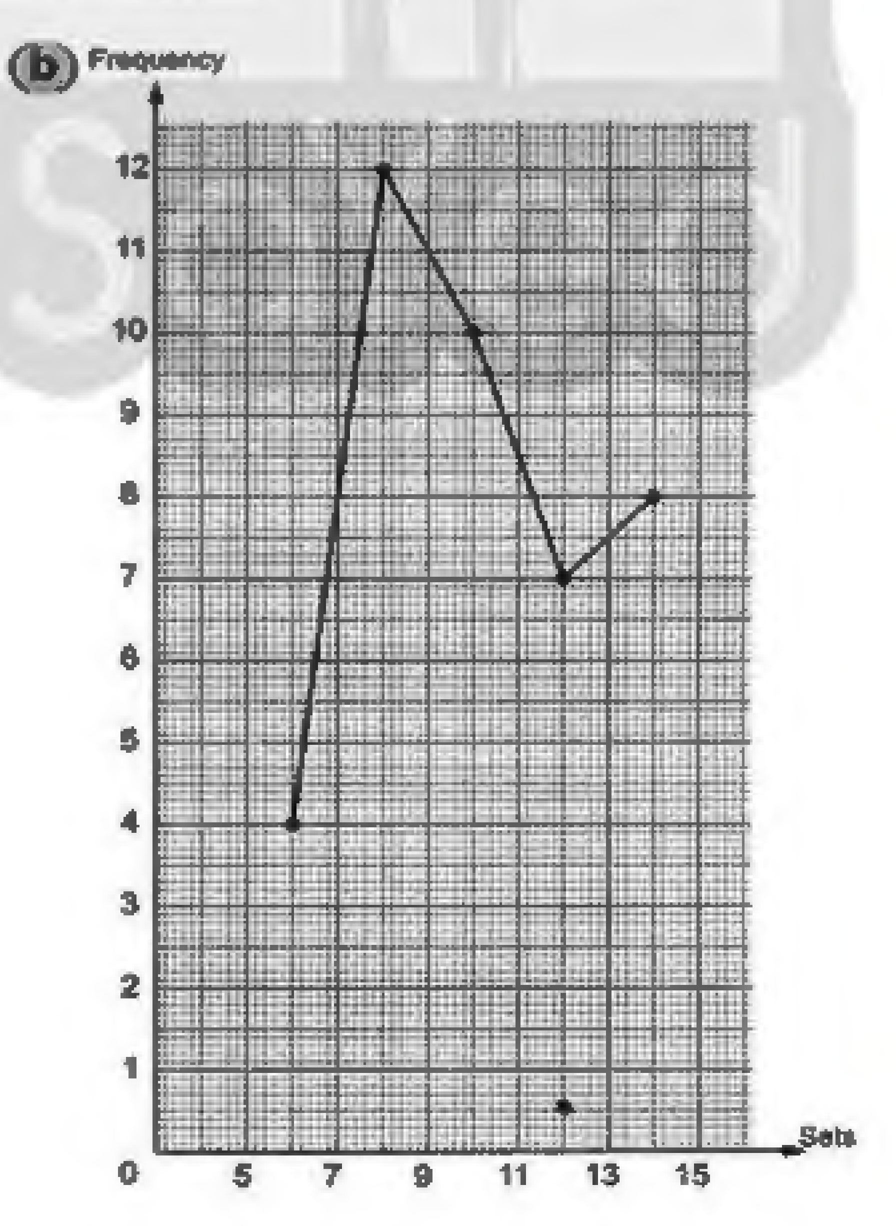
$= 1\,000 \times 37 = 37\,000$

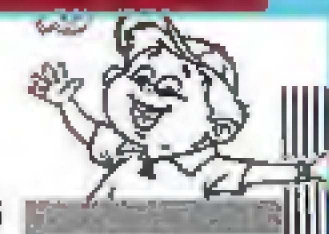
(b) (1) $x + 17 = 28$ (2) $y - 9 = 23$

5 (a)



(b)





Model 25

1 (a) $\subset$ (b) 1 (c) $\in$ (d) 1

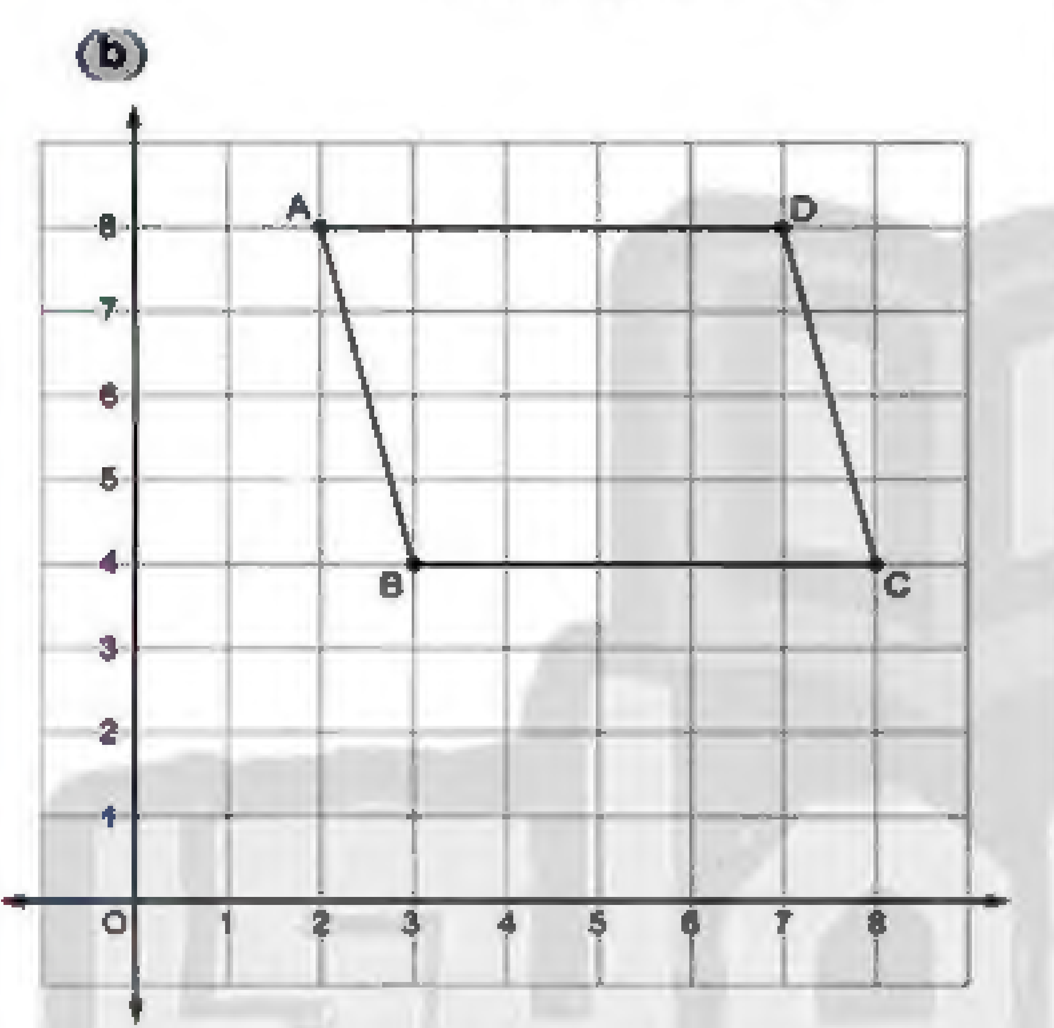
2 (a) (3 , 5) (b) 7 (c) $2x - 8$ (d) 8

3 (a) $4 \times 72 \times 25 = 4 \times 25 \times 72$

$= (4 \times 25) \times 72$

$= 100 \times 72 = 7\,200$

(b)



Parallelogram.

4 The distance $= \left(7 \times \frac{22}{7}\right) + 21 + 21 = 64$ m.

5 (a) $\frac{1}{3}x - 2 = 8$ $\frac{1}{3}x = 8 + 2$

$\frac{1}{3}x = 10$ $x = 10 \div \frac{1}{3}$ $x = 30$

(b) Football $= \frac{20}{40} = \frac{1}{2}$

Basketball $= \frac{10}{40} = \frac{1}{4}$

volleyball $= \frac{10}{40} = \frac{1}{4}$

